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REPORTS

ON THE

FOREST ADMINISTRATION

IN THE

SEVERAL PROVINCES UNDER THE GOVERNMENT OF INDIA,

WITH A

REVIEW BY THE INSPECTOR-GENERAL OF FORESTS.

1875-76.

CALCUTTA:
OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING.
1877.

CALCUTTA:
PRINTED BY THE SUPERINTENDENT OF GOVERNMENT PRINTING,
8, HASTINGS STREET.

CONTENTS.

1. Review of Forest Administration in the several Provinces under the Government of India in 1875-76, by D. Brandis, Esq., Inspector-General of Forests to the Government of India, dated the 15th December 1877.
2. Report of Forest Administration in Bengal for 1875-76, by W. Schlich, Esq., Ph. D., Conservator of Forests.
3. Review by the Lieutenant-Governor of Bengal, dated the 26th September 1876.
4. Orders by the Government of India, No. 1241, dated the 27th November 1876, and No. 309, dated the 20th February 1877.
5. Report of Forest Administration in the North-Western Provinces for 1875-76, by I. E. O'Callaghan, Esq., Officiating Conservator of Forests.
6. Review by the Lieutenant-Governor of the North-Western Provinces, dated the 13th October 1876.
7. Orders by the Government of India, No. 543, dated the 11th May 1877.
8. Report of Forest Administration in the Punjab for 1875-76, by B. H. Baden-Powell, Esq., Conservator of Forests in the Punjab.
9. Review by the Lieutenant-Governor of the Punjab, dated the 26th March 1877.
10. Orders by the Government of India, No. 1108, dated the 29th August 1877.
11. Report of Forest Administration in Oudh for 1875-76, by Captain E. S. Wood, Conservator of Forests.
12. Review by the Chief Commissioner of Oudh, dated the 30th October 1876.
13. Orders by the Government of India, No. 227, dated the 13th February 1877.
14. Report of Forest Administration in the Central Provinces for 1875-76, by Captain J. C. Doveton, Conservator of Forests.
15. Review by the Chief Commissioner of the Central Provinces, dated the 11th August 1876.
16. Orders by the Government of India, No. 1121, dated the 20th October 1876.
17. Report of Forest Administration in British Burma for 1875-76, by B. Ribbentrop, Esq., Officiating Conservator of Forests.
18. Review by the Chief Commissioner of British Burma, dated the 7th September 1876.
19. Orders by the Government of India, No. 1352, dated the 18th December 1876.
20. Report of Forest Administration in Assam for 1875-76, by G. Mann, Esq., Deputy Conservator of Forests.
21. Review by the Chief Commissioner of Assam, dated the 6th September 1876.
22. Orders by the Government of India, No. 32, dated the 12th January 1877.
23. Report of Forest Administration in Coorg for 1875-76, by Captain G. J. VanSomeren, Conservator of Forests.
24. Review by the Chief Commissioner of Coorg, dated the 30th August 1876.
25. Orders by the Government of India, No. 228, dated the 13th February 1877.
26. Half-yearly reports of Forest operations in Ajmere and Mhairwara ending 30th September 1875 and 31st March 1876.
27. Orders by the Government of India, No. 600, dated the 8th July 1876, and No. 776, dated the 15th August 1876.
28. Report of Forest Administration in Mysore for 1875-76, by Captain G. J. VanSomeren, Conservator of Forests,
29. Review by the Chief Commissioner of Mysore, dated the 23rd September 1876.
30. Orders by the Government of India, No 167, dated the 3rd February 1877.
31. Report of Forest Administration in the Hyderabad Assigned Districts, by A. T. Drysdale, Esq., Deputy Conservator of Forests.
32. Remarks by the Commissioner of the Hyderabad Assigned Districts, dated the 26th June 1876.
33. Review by the Resident at Hyderabad, dated the 21st August 1876.
34. Orders by the Government of India, No. 1238, dated the 24th November 1876.
35. Progress Report of the Forest Survey Department for 1875-76, by Captain F. Bailey, Superintendent of Forest Surveys.
36. Remarks by Colonel J. T. Walker, Superintendent, Great Trigonometrical Survey, dated the 20th October 1876.
37. Orders by the Government of India, No. 121, dated the 30th January 1877.

REVIEW OF THE FOREST ADMINISTRATION

IN THE

SEVERAL PROVINCES UNDER THE GOVERNMENT OF INDIA,

FOR THE YEAR 1875-76.

By D. BRANDIS,
Inspector-General of Forests to the Government of India.

Dated the 15th December 1877.

CONTENTS:

CHAPTER I.

RESERVES AND LEASED FORESTS.

	PARA.	PAGE.
Area.		
Summary	1	3
Bengal	2	3
Character of Forest Reserves in Bengal	3	4
North-Western Provinces	4	4
Character of Forests in the North-Western Provinces	5	4
Punjab	6	4
Oudh	7	4
Central Provinces	8	4
British Burma	9	4
Character of Forests in British Burma	10	5
Assam	11	5
Coorg	12	5
Ajmere	13	5
Object of demarcating Reserves in Ajmere	14	5
Influence on water storage in tanks	15	5
Production of Forest produce	16	6
Mysore and Berar	17	6
Protection from fire.		
Summary	18	6
Bengal	19	6
North-Western Provinces	20	6
Punjab	21	6
Oudh	22	6
Central Provinces	23	6
British Burma	24	7
Assam	25	7
Coorg	26	7
Ajmere	27	7
Mysore	28	7
Berar	29	7
Plantations.		
Summary	30	7
Bengal	31	7
North-Western Provinces	32	8
Punjab	33	8
Oudh	34	8
British Burma	35	8
Assam	36	8
Mysore	37	8
Berar	38	8

Forest Survey.

	PARA.	PAGE.
Progress of original Surveys	39	8
Preparation of Forest Maps	40	8
Junior Officers posted to the Survey Branch	41	9

CHAPTER II.

UNRESERVED FORESTS.

Central Provinces	42	9
Assam	43	9
Berar	44	9

CHAPTER III.

PROTECTION OF GOVERNMENT FORESTS.

Summary	45	10
Details	46	10
Forest Rules made during the year	47	11
Reserved trees in British Burma	48	11

CHAPTER IV.

YIELD AND FINANCIAL RESULTS.

Summary	49	11
General results	50	11
Receipts and Charges on account of Government Timber operations	51	12
Other Forest Revenue	52	12
Demarcation, protection, and improvement of Forests	53	12
Rent of leased Forests	54	13
Communications and Buildings	55	13
Timber exported on Government account	56	13
Yield of demarcated Reserves insignificant	57	13
Export of Forest produce beyond India	58	14
Valuation of produce exported	59	14
Forest produce exported, not all produced in Government Forests	60	14
Myrobalams	61	14
Ornamental woods	62	14
Teak	63	15
Financial retrospect	64	15
Exceptionally high revenue in 1875-76	65	15
British Provinces	66	16
Conclusion	67	16

APPENDICES.

Statement I—Summary of Revenue and Expenditure during the year 1875-76.

" II—Quantity of timber, wood, and bamboos brought to depôts from Government Forests, and sold on account of Government.

" III—Receipts and Charges of the Forest Department throughout India during the twelve years from 1864-65 to 1875-76.

CHAPTER I.

RESERVES AND LEASED FORESTS.

AREA.

THE following statement exhibits the area of the demarcated reserves at the close of the year, as entered in the provincial reports :— Summary

Area in square miles of demarcated reserves at the close of 1875-76.

PROVINCES.	Reserves.	Leased forests	TOTAL.
Bengal	2,585	...	2,585
North-Western Provinces	2,421	Leased forests not demarcated.	2,421
Punjab	3,514	186	3,700
Oudh	824	...	824
Central Provinces	2,332	...	2,332
British Burma	613	...	613
Assam	1,033	...	1,033
Coorg	380	...	380
Ajmere	91	...	91
TOTAL	13,793	186	13,979
Mysore	449	...	449
Berar	661	...	661
GRAND TOTAL	14,903	186	15,089

The area at the close of 1874-75 aggregated 12,071 square miles; there has therefore been an increase of 3,018 square miles during the year. A portion of this increase however is nominal, being due to correction of the area, though in some provinces, particularly in Bengal, Assam, and the Central Provinces, large additions to the demarcated area have been made.

2. In the lower provinces of *Bengal* an additional area of 1,118 square miles has been reserved, consisting of the following forest tracts :— Bengal.

(*a*) The Apalchand Reserve, in the Jalpáiguri Division, estimated to contain 30 square miles, chiefly sâl, with a belt of sissoo forest along the Teesta River.

(*b*) A number of blocks in the Palamow District, aggregating 151 square miles, on the hills drained by the Koel River, stocked partly with sâl, partly with mixed forest.

(*c*) The reserves in the Jessore District of the Sunderbuns were increased by the addition of 314 square miles to the south of the original reserves, making the total area reserved in that district 1,199 square miles. This is only a small portion of the total area covered with forest in the Sunderbuns; for there are 1,819 square miles of unleased forest not included within the reserves, in addition to large leased areas which have not been reclaimed.

(*d*) In the Chittagong Division the Matamahari Reserve, comprising the hills drained by the Matamahari River, and measuring 223 square miles, was demarcated.

(*e*) In the district of Singbhoom a portion of the Government Estate Saranda, situated between the Brahminee and Byturnee Rivers, and estimated to contain 400 square miles, was reserved. This reserve is known to be rich in large sâl timber; and though there has not yet been any export, the forest will, doubtless, be eventually exceedingly valuable.

Character of forest in the Bengal reserves

3. As regards the character of the forest, the area declared as reserved forest in Bengal is classified as follows by the Conservator:—

	Square miles.
(1.) Sâl, including limited areas of sissoo, intersected by savannah tracts	766
(2.) Hill forest near Darjeeling	50
(3.) Sundri forest	1,199
(4.) Mixed forest, Chittagong District	570
TOTAL	2,585

North-Western Provinces

4. The return of reserved forests in the *North-Western Provinces* exhibits 2,421 square miles, instead of 1,209 entered in the return for 1874-75. The difference is not due to the demarcation of additional reserves, but to the correction of previous returns. The figures recorded in the return, however, will require further correction.

A great portion of the southern or outer boundary of the Kumaun and Garhwal forests has not yet been demarcated, and the areas stated—700 and 600 square miles—are nothing but a rough estimate. In Jaunsar an area of 119 square miles is entered under unreserved forests, which should be transferred to reserves; and in the case of other forest districts, though they have been demarcated and entered under reserves, their area is not yet accurately known.

With these exceptions, however, the area now reported from the North-Western Provinces may be regarded as approximately correct.

Character of forest in the North-Western Provinces.

5. As regards the character of the forest, there are 24 square miles (or, including the second class forests mentioned, 143 square miles) of hill forest in Jaunsar, and 178 square miles of mixed deciduous forest, some of which contain teak, in the Jhansi Division. Of the rest, a large area is sâl-producing, but no data are yet available to give an account of the different descriptions of forest, as was done in the case of Bengal. The forests in native Garhwal are leased from the Tehri Raja, but none of these are demarcated, and no entry under "leased forests" therefore is made for the North-Western Provinces.

Punjab

6. For the *Punjab* the return for 1874-75 gave 3,782 square miles of reserved and 765 square miles of leased forests as the area demarcated on the 31st March 1875. The statement appended to the report for 1875-76 exhibits for the same date an aggregate of 3,613 square miles of reserved forests in British territory, and of 234 square miles of leased forests. At the close of the year the area which seems to be most nearly correct is 3,514 square miles of reserves in British territory, and 186 square miles of leased forests. From the leased forests are excluded those situated in Bussahir, which, as explained in last year's review, are not really demarcated. The alterations made are chiefly due to corrections in the estimated areas. These figures may be regarded as approximately correct, but there is still some uncertainty regarding the area of some of the reserved forests in the Punjab.

Oudh

7. In *Oudh* the area of the reserves remains the same as in 1874-75. They comprise 824 square miles, chiefly sâl forest, including a limited area of grass land, some sissoo forest, and some mixed deciduous forest in the Gonda District. No precise data regarding the area of these different classes of forest are available.

Central Provinces.

8. In the *Central Provinces* the area was increased from 2,133 to 2,332 square miles, the main additions having been the Moharli Reserve in the Chanda District (150 square miles), two smaller reserves in the Wardha District, and some additions to the sâl forests on the uplands of Balaghat.

The reserved forests of the Central Provinces may be classified as follows:—

(1) Sâl forests.
(2) Bija-sâl, teak, and bamboo.
(3) Teak, bamboo, and mixed forest.
(4) Anjan, teak, and bamboo.

The area of these different classes cannot, however, yet be stated.

British Burma

9. In *British Burma* some progress in demarcation has been made, the area of reserved forests having been extended from 563 to 613 square miles. But, as explained in last year's review, the work is in every respect in its commencement. The Conservator reports that of the area demarcated, only about 118 square miles are protected against toungya cutting.

10. As regards the character of the forest, he classifies the reserves as follows :— Character of forest in British Burma.

	Square miles.
Teak	521
Catechu	27
Mixed forest	61
TOTAL	612

The 61 square miles of mixed forest were demarcated in the immediate vicinity of the Irrawaddy Valley Railway, the object being originally to provide fuel for the working of that line. Should, however, coal be burnt instead of wood, the produce of these tracts will, doubtless, find a ready sale at Rangoon and in the open country in the vicinity of the Railway.

11. In *Assam* the area of reserved forests was increased from 603 to 1,033 square miles, the main additions being 80 square miles in the Tezpur district, comprising the principal plantations of *Ficus elastica*, and 348 square miles in the Goalpara district, chiefly sâl forest. Assam

12. In *Coorg* the area remains 380 square miles, as in 1874-75. Of this area, 10 square miles are evergreen forest in the vicinity of the Ghâts, while the rest is mixed deciduous forest, much of it with bamboos and teak. Two tracts of evergreen forest (Vurti and Kerti) have not yet been finally demarcated, and their area is not known. Coorg.

13. In *Ajmere* and *Mhairwara*, 11 tracts have now been finally demarcated, aggregating 58,241 acres or 91 square miles. The largest of these reserves, the Burakhan or Todgarh tract, is situated on the hills along the south-western boundary of Mhairwara, and comprises 40,000 acres. This and three other tracts in Mhairwara were, when first placed under protection, partially stocked with a mixed deciduous forest, in which two species of *Anogeissus*, *A latifolia* and *pendula*, *Boswellia thurifera*, *Acacia Catechu*, *rupestris* and *leucophlœa*, and *Prosopis spicigera* were the principal trees. Some bamboo, *(Dendrocalamus strictus)* is also found in these hills. The protection of these tracts was commenced as early as 1872, nearly three years before they were regularly demarcated, and the present report shows that the beneficial effect of this protection has been considerable, the forest growth having become dense and almost impenetrable in places. Ajmere.

The tracts demarcated in Ajmere were almost bare when protection commenced, but here also some forest growth is beginning to spring up.

14. As explained in the Review for 1875-76, the chief object in demarcating these reserves was to put a stop to the further denudation of the hills in the arid climate of that district, and in some measure to improve the storing of water in tanks. In this respect doubtless beneficial results will be attained, but it must not be imagined that an area of 91 square miles of carefully protected and well stocked forest will have any appreciable effect upon the climate. The area of Ajmere and Mhairwara is 2,754 square miles, the total area of Rajputana is 127,600 square miles, and it is evident that the area of the reserves is an insignificant proportion of the total area of the country in which they are situated. The measure of rainfall and atmospheric moisture in these districts, upon which success or failure of the crops depends, are governed by laws of a cosmic character which are not affected by a few hundred square miles more or less covered with forest. Object in demarcating reserves in Ajmere.

15. But what we may justly hope to effect is to improve and husband the storage of the water-supply, and a more regular and plentiful filling of the tanks. To a great extent the crops in Ajmere and Mhairwara depend upon the water-supply in tanks, of which there are more than 600. The hills surrounding the valleys from which most of these tanks are fed are bare and stony, and almost completely denuded of forest vegetation. The scanty rainfall in those districts comes down in a small number of heavy showers, and the rain-water not being detained by any vegetable cover rushes down the barren hill-sides in torrents, silting up the tanks and breaking the bunds, instead of gradually and steadily filling them. As far as the demarcated reserves include portions of the catchment basin of some of these tanks, so far can an improvement be expected in this respect. As these hills become again covered with Influence on water storage in tanks.

trees and brushwood, the surface drainage will be regulated and the water-supply in the tanks will be more regular and plentiful.

Production of forest produce.

16. But though the primary object of demarcating these reserves was not the production of timber and revenue, they will doubtless become valuable in this respect also, for a larger supply of grass, firewood, and small building wood will be available for the agricultural population, and if the officers in charge of these forests succeed, as they ought to, in increasing the production of bamboos, *Acacia Catechu*, and other useful trees, the revenues of these estates will not be inconsiderable.

Mysore and Berar.

17. In *Mysore* and *Berar* the area of reserved forests has remained unchanged.

PROTECTION FROM FIRE.

Summary

18. The following statement shows the area of the forests protected from fire during the year:—

Area of Forests protected from fire in 1875-76.

Provinces.	Acres.	Total outlay from the commencement.	Commencement of fire conservancy in tracts continuously protected.
		Rs.	
Bengal	—	700	—
North-Western Provinces	186,415	20,298	1874
Punjab	—	—	—
Oudh	20,480	4,260	1871
Central Provinces	358,595	50,630	1864
British Burma	47,751	18,749	1872
Assam	35,274	2,719	1872
Coorg	—	—	—
Ajmere	—	—	—
Total	6,48,515	97,356	
Mysore	20,480	751	1866
Berar	4,58,280	5,504	1870
GRAND TOTAL	1,127,275	1,03,611	

Bengal.

19. In *Bengal* fire protection was unsuccessful, the Sivok and Muraghât sâl forests, which had been protected in 1874-75, were burnt. This is ascribed by the Conservator to the unusually dry season, no rain having fallen from October 1875 to May 1876.

North-Western Provinces.

20. In the *North-Western Provinces* the returns relate to the entire hot season of 1876, and have been carried on to the commencement of the rains of that year. The results are as follows: An area aggregating 93,000 acres, chiefly in the Kumaun, Garhwal, Dehra Dun, and Jaunsar divisions, was successfully protected during the hot season of 1875. Small portions of this area were burnt during the hot season of 1876, but considerable additions were made in the Kumaun and Gorakhpur divisions, so that the total area protected to the commencement of the rains of 1876 amounted to 186,400 acres.

Punjab.

21. In the *Punjab* no special measures for fire protection were taken.

Oudh.

22. In *Oudh* the area protected remains unchanged. Fires have again been kept out from the Dudua home block in the Kheri Division, chiefly sâl with a small area of sissoo, the Charda forest which is free of grazing rights, and from a portion of a block of the Bharaich reserves.

Central Provinces.

23. In the *Central Provinces* this important work has received further extensions on a large scale. The aggregate area protected to the end of the hot season of 1876 was 358,595 acres, distributed over 21 reserves. Of this area 23,000 acres in the Bori forest have been protected continuously since 1864, 26,000 acres in Jagmandal and Choharigogarh since 1867, and nearly

60,000 acres since 1869, 1870, and 1871, chiefly in the Satpura, Bijeragogarh, and Singrampur forests.

Forest administration in the Central Provinces has taken the lead in this great work, and over extensive areas the character of the forest has been completely changed through continued fire protection.

24. For *British Burma* the present report explains that, besides the Kwaymakine or Mokkha Beeling reserve, several other forests had been continuously protected, the chief of which are the Boben, Phapoon, and Sinzway reserves. In addition to these, several new areas were taken in hand, so that the total area under protection at the close of the year amounted to 47,751 acres. Burma

25. In *Assam* the area protected during the year is stated to have been 35,274 acres, but it is evident from several passages in the report that continuous fire protection of the forests in which the work has been commenced cannot yet be regarded as assured. Assam

26. In *Coorg* no progress was made in protecting the forests from fire. The Conservator reports that fortunately the early rains greatly mitigated the usual effects of the yearly fires, and that but little damage was caused by fires during the year. But no special arrangements were made to exclude fires from the Coorg forests. Coorg.

27. The greater part of the reserves in *Ajmere* and *Mhairwara* were protected from fire; there were, however, several conflagrations, and hence the area protected has not been entered in the return. Ajmere

28. In *Mysore* the area protected from fire has been increased from 11,520 to 20,480 acres. During 1874-75 the Devaraydurga forest only was protected, and to this were added during the year under review the Shankargudda and a portion of the Sakrebail forest in the Nagar, and a small portion of the Begur forest in the Mysore Division. Mysore.

29. In *Berar* the protected area has been increased from 364,800 acres at the commencement, to 458,280 acres at the close of the year. This area comprises the entire Bairagarh reserve, a large portion of the open forests of the Melghat, and the greater portion of the reserves in South Berar. The total outlay on fire protection from the commencement has only amounted to Rs. 5,501 in Berar. Berar

Plantations.

30. The following statement exhibits the area of the plantations at the commencement of the year, and the extensions made during the year :— Summary

Provinces.	Area at the commencement of the year.	Area added during the year.	Area excluded during the year.	Area at the close of the year.	Previous cost.	Outlay during the year.	Total outlay.	Remarks.
	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	
Bengal	427	63	...	490	30,826	7,172	37,998	
North-Western Provinces	1,135	602	...	1,737	18,685	6,373	25,058	
Punjab	12,194	1,583	...	13,777	3,88,914	46,116	4,35,030	The statement is incomplete this year.
Oudh	351	...	351	...	7,324	...	7,324	The plantation was destroyed by fire.
Central Provinces	...	...	...	...	...	...	..	
British Burma	2,493	160	...	2,653	1,84,487	20,309	2,04,796	
Assam	308	194	..	502	11,976	6,250	18,226	
Coorg	455	15	..	470	24,023	2,392	26,415	
Ajmere	..	...	...	...	...	...	...	
Total	17,363	2,617	351	19,629	6,66,235	88,612	7,54,847	
Mysore	2,199	1,057	...	3,256	71,778	29,424	1,01,202	
Berar	2,338½	...	1,375½	963	25,089	3,757	28,846	
GRAND TOTAL	21,900½	3,674	1,726½	23,848	7,63,102	1,21,793	8,84,895	

The following extensions merit special mention.

31. In *Bengal* an extension of 32 acres was made at Bamunpokri, and one of 30 acres at Sitapahar, a mixture of teak and toon being planted in both cases. Bengal.

North-Western Provinces.

32. In the *North-Western Provinces* the chief extension was in the Jaunsar Division, where 386 acres were added, stocked partly with deodar, and partly with other conifers, oaks, and chestnuts.

Punjab.

33. Of the large extension reported in the *Punjab* (1,583 acres), the greater portion was in Changa-Manga, where 902 acres were sown with jhand (*Prosopis spicigera*), while 50 acres were sown with reru (*Acacia leucophlœa*). The rest were chiefly extensions of the plantations on sailaba land near Lahore, which was mostly stocked with sissoo.

Oudh.

34. In *Oudh* a plantation of sissoo, situated on the banks of the Kauriala river, was destroyed by fire.

Burma.

35. In *Burma* 150 acres, chiefly stocked with teak, were added to the Magayee plantations.

Assam.

36. In *Assam* a small area (20 acres) was added to the teak plantation at Kulsi, but the chief additions were made to the caoutchouc plantations of Kulsi and Charduar, an extension of 30 acres being made in the Kulsi plantation, while to the Charduar plantation 140 acres were added. Experience has shown that scattered as the natural caoutchouc trees are through the forests situated in the most inaccessible and unhealthy parts of Assam, their protection is almost impossible: hence the formation and extension of India-rubber plantations is a necessity. Caoutchouc plantations are still in the experimental stage, but no great difficulty has hitherto been experienced in propagating the trees from seed or from cuttings, provided young and vigorous top shoots are used as cuttings. The rate of growth, as far as known, is rapid. Mr. Mann gives the following dimensions of a tree 32 years old at Tezpur, which are remarkable. That tree is 110 feet high, the diameter of the crown is 140 feet, and the distance of the outermost aërial roots from the stem is 30 feet. There is every reason to anticipate that the caoutchouc plantations in Assam will be remunerative.

Mysore.

37. In *Mysore* the chief additions were to the fuel plantations in the Nundydroog Division: the extensions aggregated 1,057 acres.

Berar.

38. The planted area in *Berar* shows a decrease of 1,375½ acres, caused by the exclusion from the return of all imperfectly stocked areas.

Forest Survey.

Progress of original surveys.

39. The following is a brief account of the work done by the Forest Survey Branch under Captain Bailey from 1st October 1875 to 30th September 1876.

The survey of the Dehra Dún and Saharanpur forests was continued and nearly completed, and in addition to this, the survey of the reserved forests in Jaunsar and of the Kumaun and Garhwal forests was commenced. The survey of the forests in Jaunsar, like that of the Dehra Dún forests, was undertaken in connection with the operations of the Great Trigonometrical Survey. A portion of the Jaunsar forests was surveyed on the scale of two inches to the mile, but the remainder of these reserves was surveyed on the scale of four inches to the mile. The year under review was the first in which separate parties were at work simultaneously in the survey of forest districts at considerable distances from each other. Native agency was largely employed in surveying the topographical features of hilly country.

Preparation of forest maps.

40. Besides the execution of original surveys of Government forests, it is the duty of the Superintendent of Forest Surveys to assist Conservators in the preparation of forest maps from the best available data. During the year under review the Superintendent was in correspondence with Conservators in most provinces, and the following list exhibits the forest maps prepared in his office:—

1. Sheets of Dehra Dún and Siwalik Survey drawn (XVII, XVIII, XXV, XXVI, XXVII, XXXV, XXXVI and XLI) .	8
2. Sheets of Kumaun and Garhwal Survey drawn (9,11,12) .	3
3. Dehra Dún and Siwalik Sheets coloured	812
4. Maps of Ajmere, Mhairwára, and Berar drawn for the Forest Conference Report	3
5. Maps of Ajmere, Mhairwára, and Berar drawn for the Forest Conference Report, coloured	2,250
6. Map of the Palamow Reserved State Forest, Bengal, drawn for photozincography	1

7. Sheets of Mr. Reynold's Map of Khánpur-Hazára coloured .	27
8. Boundaries entered on Sheets of Khágán and Siran Maps .	18
9. Maps of Kulu enlarged to a scale of ½ inch=1 mile from the Atlas Sheets	2
10. Map of the Forests in the North-Western Provinces, on the scale of 1 inch=8 miles (nearly completed) . . .	1
11. Maps of Nilambur Plantation, Madras, coloured for Forest Conference Report	450

Some tracings have also been supplied to the local Forest and other officers.

Junior officers posted to the Survey Branch.

41. In August 1875 the Government of India reviewed the work done by, and the organization of, the Forest Survey Branch, and laid down certain general principles for its future management. A prominent feature in these orders was, that in addition to the execution of original surveys, and the assistance to be given to Conservators in the preparation of forest maps, the operations of the Forest Survey should be used for the training of junior Forest officers in this work. It was arranged that such officers should be temporarily attached to the Forest Survey Branch for instruction, with the view of their being available for Forest Survey work on return to their own province. Accordingly, during the year under review, three officers from the North-Western Provinces, Mysore, and the Punjab, were under instruction in accordance with this arrangement.

The expenditure on account of the Forest Surveys during the financial year 1875-76 amounted to Rs. 58,993.

CHAPTER II.

UNRESERVED FORESTS.

42. Facts of importance regarding the management of the unreserved forests are reported only from the following provinces:—

Central Provinces.

In the *Central Provinces* the area of the unreserved forests has been diminished from 16,942 to 16,510 square miles, a portion of the area lost having been added to the reserves, as explained in the first chapter. The unreserved forests of the Central Provinces still continue to furnish the surplus produced by Forest administration in those provinces. The figures for 1875-76 are as follows:—

	Reserved forests. Rs.	Unreserved forests. Rs.
Receipts	2,59,661	4,65,674
Charges	2,84,964	85,799
Surplus . .	...	3,79,875
Deficit	25,303	...

Calculated on the area, the gross receipts amounted to 2·7 annas per acre in the reserves, and to 0·7 annas in the unreserved forests.

Assam.

43. In *Assam* the area of the unreserved Government forests is stated to be only 7,034 square miles; but considering that the area of the province is 47,041 square miles, a small portion of which only is cultivated, and that the reserves measure 1,033 square miles only, it is probable that the area of Government forests outside the reserves is more extensive. The unreserved forests are under the control of Deputy Commissioners, and are in charge of the village headmen or mouzahdars. Twenty-nine kinds of timber are reserved, and these may not be cut without permission.

Berar.

44. In *Berar* the Deputy Conservator explains that the area of the unreserved forests was incorrectly stated in the report for 1874-75, and that the correct figures are 3,874 square miles at the beginning, and 3,818 square miles at the close of the year. But these areas include certain forests demarcated as district reserves, which are intended to be maintained under Forest, and which should therefore be classed under Reserves.

During the year under review, Block No. IV of the unreserved forests in

the Melghât was opened for cutting, and the result, as compared with the result of the previous years, stands as follows :—

	Teak and reserved wood.		Other produce.
	Pieces.	Duty: Rs.	Duty: Rs.
1872-73, Block No. I . .	107,573	11,551	29,804
1873-74 „ „ II . .	182,106	27,340	51,021
1874-75 „ „ III . .	219,387	25,629	47,500
1875-76 „ „ IV . .	159,185	16,410	49,213

This closes the system of working described in the review of 1874-75, which was initiated in 1872. These figures, as far as they go, do not indicate any considerable increase in the demand for forest produce in the open and densely inhabited country of the Poornah valley, which extends south of the Melghât forests: on the contrary, there was a decrease in the demand for reserved woods during 1875-76 as compared with the previous year, which is ascribed by the Deputy Conservator to the large import of teak, duty free, from the Central Provinces. During the year under review, the change in the system of management adverted to in last year's review was effected, and the attempt to enforce restrictions on the extension of cultivation and the cutting over the whole of the unreserved forests of the Melghat was abandoned. A limited area was demarcated instead as an additional reserve, which will be strictly protected.

CHAPTER III.

PROTECTION OF GOVERNMENT FORESTS.

Summary.

45. The number of prosecutions, convictions, and acquittals on account of forest offences in the different provinces appears from the following statement :—

Prosecutions for breaches of Forest Rules during 1875-76.

Provinces.	Number of persons.		
	Prosecuted.	Convicted or under trial.	Acquitted.
Bengal	73	45	28
North-Western Provinces . . .	702	671	31
Punjab	1,240	1,158	82
Oudh	129	101	28
Central Provinces	1,366	1,231	135
British Burma	26	24	2
Coorg	7	4	3
Assam	46	44	2
Total . .	3,589	3,278	311
Mysore	745	596	149
Berar	499	436	63
GRAND TOTAL . .	4,833	4,310	523

Details.

46. The number of persons prosecuted has increased from 2,730 in 1873-74 to 3,066 in 1874-75, and 4,845, in the year under review. The increase has been steady in *Bengal*, the *North-Western Provinces*, the *Punjab*, *Oudh*, and the *Central Provinces*. In *Mysore and Berar* the numbers have fluctuated during the three years in question, but there has been no considerable increase. In *Burma* the number of prosecutions is insignificant, considering the extent and importance of the forests in that province. But the return is incomplete; for the Conservator states that it does not include cases of timber theft, or breaches of the timber revenue rules. The last-named cases are detailed in a separate statement, which exhibits 31 persons prosecuted, five of whom were acquitted. As far as the returns appended to the provincial reports go, it would appear

that the percentage of acquittals in prosecutions was 18 in 1873-74, 12 in 1874-75, and 11 in 1875-76.

In *Bengal* the cases prosecuted chiefly related to theft of small timber and unlawful cutting of trees.

In the *Central Provinces* prosecutions are classified as follows :—

	Number of persons prosecuted.
1. Trespass	2
2. Injury done by fire	13
3. Unauthorized felling or appropriation of timber	990
4. Unauthorized appropriation of minor forest produce	142
5. Grazing without permission	146
6. Unauthorized breaking up of forest-land for cultivation	73
TOTAL	1,366

47. During the year under review, rules were made by the Local Government, and confirmed by the Governor General in Council, under the Government Forest Act, for the North-Western Provinces (September 1875), and for those portions of British Burma which were not comprised in the area to which the rules of August 1865 apply (March 1876). Forest rules made during the year.

48. Another important change in the matter of Forest legislation was made in Burma. Originally teak only was a reserved tree, and to this were added, in June 1873, two other kinds, *viz.*, thitkado and thitka. In addition to these, 12 other trees were reserved by notification of 1st January 1875, thus making the total number of reserved trees 15 in those forest tracts to which the rules of 1865 apply. Reserved trees in British Burma.

CHAPTER IV.

YIELD AND FINANCIAL RESULTS.

49. Statement I appended to this review exhibits a summary of the revenue and expenditure during the year, under the different heads, arranged in the same manner as in the corresponding statement of the review for 1874-75. The numbers in brackets refer to the sub-heads in the provincial statements. It has again been necessary to re-cast the classification, so as to bring out clearly the financial results of Forest administration, and to make the figures of these years comparable with those arranged under the old classification and under that finally adopted in February 1877. Summary.

50. The general results shown in the manner adopted in the two preceding reviews are as follows: General results.

PARTICULARS.	RECEIPTS.		CHARGES.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
1. Timber and other produce removed on Government account	35,03,193	I—1	16,42,958	I—1; half of VIII and IX; quarter of B.
2. Timber and other produce removed by purchasers, and other revenue.	22,73,791	I—2 and 3; II; III and IV.	5,22,858	I—2 and 3; II; VI and X; half of VIII and IX; quarter of B.
3. Formation, protection, and improvement of the forests.	...	...	9,61,405	III; IV; V and VII; half of B.
TOTAL	57,76,984	...	31,27,221	

The allotment of the establishment and general charges to the three great heads exhibited in this statement is a rough and preliminary one. Eventually it is intended that in each province an analysis shall be made of the annual accounts, and that the allotment be effected according to the peculiar circumstances of each province. When this has been done, a statement for all

provinces can be compiled, which will be more approximately correct than those hitherto recorded in the annual review.

Receipts and charges on account of Government timber operations.

51. The comparison of the statements entered in the reviews of the last three years does not yet admit of important conclusions.

The revenue realised by the sale of timber brought to depôt by Government agency, and the charges incurred on account of the same, have been as follows :—

	Revenue.	Charges.
	Rs.	Rs.
1873-74	28,60,000	17,00,000
1874-75	24,34,000	19,16,000
1875-76	35,00,000	16,43,000
Annual average . .	29,31,300	17,53,000

The large receipts in the last year were exceptional, and they were due chiefly to the large timber sales effected in the Punjab, the Central Provinces, and particularly in British Burma, combined with the high prices realized for teak in the last named province. The province of Coorg also contributed its share, large quantities of sandalwood having been sold at unusually high prices. As usual, part of the timber which produced this revenue had been brought to depôt during previous years, and the outlay incurred on it had also appeared in the accounts of previous years. This explains that in the year under review the charges on account of Government timber are comparatively low, though the receipts are higher than in previous years.

Reliable conclusions regarding the proportion of charges to receipts on this account can only be based upon the totals of a series of years. The three years for which these figures are here given exhibit the following percentage of charges to gross receipts :—

Gross receipts	100
Charges	59
Surplus	41

Considering that the charges, as here entered, include a fair proportion of establishment and general charges, this result is not unfavourable; but a glance at the detailed statements appended to the reviews of these three years will show that the results differ vastly in the different provinces. Thus, while in Burma the charges on account of the timber brought down on Government account during the three years in question are considerably below 50 per cent., those in the North-Western Provinces are considerably above that percentage.

Other Forest revenue.

52. The remaining Forest revenue (item 2 of paragraph 50) consists of the following amounts :—

		Rs.
1. Produce removed or consumed by purchasers—		
(a) Timber, wood, charcoal, and bamboos .	9,11,366	
(b) Grazing and grass	5,30,128	
(c) Minor produce	2,76,227	17,17,721
2. Duty on foreign timber		3,13,825
3. Other revenue		2,42,245
TOTAL . .		22,73,791

The charges debitable to this revenue amount to Rs. 5,22,858.

Demarcation, protection, and improvement of forests.

53. The outlay on demarcation, protection, and improvement of the forests, including plantations, has been Rs. 9,61,405.

This sum consists of the following items :—

		Rs.
1. Demarcation and compensation for land and rights	III (1, 2), VII (3)	57,017
2. Survey	III (3)	11,075
3. Plantations	IV (2)	1,31,214
4. Protection from fire . . .	IV (1)	74,810
5. Rent of leased forests . . .	V	55,872
6. Communications and buildings .	VII (1, 2, 4)	97,037
.	TOTAL . .	4,27,025
Proportional quota of Establishment charges	. . . .	5,34,380
	TOTAL . .	9,61,405

The work done under heads 1 to 4 has already been detailed; it remains to explain the outlay under heads 5 and 6.

54. The chief payments for rent of leased forests occur in the Punjab, the North-Western Provinces, and Berar. In the *Punjab* Rs. 21,000 are paid annually to the Chamba State for the lease of its forests, and Rs. 3,800 were paid during the year to the Raja of Bussahir on account of the lease of the forests in his territory. In the *North-Western Provinces* Rs. 10,351 were paid for the lease of the forests in Native Garhwal; and Rs. 17,120 is the amount paid annually in *Berar* to the Melghât Rajas as compensation for their forest rights in the Bairagarh Reserve. **Rent of leased forests.**

55. The outlay for communications and buildings has been heaviest in the following provinces: **Communications and buildings.**

In the *North-Western Provinces* the total outlay on this account was Rs. 43,012, of which Rs. 36,556 were expended on roads and bridges, *viz.*, Rs. 13,000 in Kumaun, Rs. 9,300 in Garhwal, Rs. 10,000 in Jaunsar, and Rs. 4,200 in Rohilkhand. The chief object of the forest roads in these divisions is to facilitate the export of timber; some of them are only temporary, and their cost might fairly be charged to the Government timber operations. Rs. 6,000 were laid out on buildings, and Rs. 390 on other works.

In *Oudh* the outlay on this account has been Rs. 13,093, of which Rs. 5,662 were for communications, Rs. 6,110 for rest-houses in the forests, and Rs. 1,321 for other works. An excellent and well-planned system of permanent broad roads and rides has been laid out in the Oudh forests, and it is gradually being completed. These roads serve as export lines for timber and other produce, as division lines of blocks and compartments, and in order to facilitate fire protection. The whole of this outlay in Oudh may fairly be charged to the improvement of the forests.

In *Burma* the outlay under this head amounted to Rs. 12,668, of which Rs. 8,674 were for rest-houses in the forests and other buildings, and Rs. 3,311 for other works, chiefly the clearing of streams for floating. The outlay on forest roads in Burma is insignificant, *viz.*, Rs. 683.

56. As in last year's review, an attempt has been made, in Statement II, to exhibit the quantity of timber, wood, and bamboos brought from the forests on Government account. But this statement, like that prepared for 1874-75, does not give a correct idea of the extent to which timber operations have been carried on in all provinces to which it relates. The statement submitted from the North-Western Provinces, for instance, includes a large number of sleepers and other scantling, the cubic contents of which are not given. Hence the timber operations in these provinces, which are on a very large scale, are not correctly represented in this return. **Timber exported on Government account.**

Of the other provinces with large timber operations, the following figures may be quoted as reliable :—

	Brought down. *Cubic feet.*	Sold. *Cubic feet.*	
Punjab . . .	703,615	948,127	Chiefly deodar and pine wood.
Central Provinces .	253,845	138,434	„ teak and sâl.
Burma . . .	2,579,730	2,111,425	„ teak.

57. No information of importance is available this year regarding the yield in material of the demarcated forests per acre. With few exceptions, among which may be included some forest districts in the North-Western Provinces, the yield of the demarcated reserves has continued to be insignificant with reference to their area. The great mass of these forests was exhausted, or nearly so as regards the stock of mature and valuable timber, when they came **Yield of demarcated reserves insignificant**

into the charge of the Forest Department, and as a necessary consequence they must now be worked most sparingly, until their condition has been improved by steady work of protection and improvement during a series of years.

Export of forest produce beyond India.

58. The export of forest produce from India during the year under review has been as follows. The articles are arranged in the order adopted last year:—

	Quantity in tons of 20 cwt; in the case of teak of 50 cubic feet.		Valuation at port of shipment in 1875-76.	
	Average of 5 years, 1870-71—1874-75.	In 1875-76.	Total.	Per ton.
			Rs.	Rs.
1. Caoutchouc	789	763	9,78,607	1,282
2. Shell-lac	2,824	4,032	65,06,928	1,613
Laedye	587	533	2,65,723	500
3. Sandalwood, ebony and other ornamental woods	Not known		2,08,509	Not known
4. Cutch	9,640	9,762	16,87,846	173
5. Myrobalams	Not known	14,317	10,64,013	74
6. Teak	43,905	60,656	44,06,182	73

Valuation of produce exported.

59. The figures of this statement are taken partly from the trade accounts, and partly from Mr. O'Conor's review for 1875-76. It is well known that the valuation of the exports hitherto given in the trade accounts does not in all cases represent the actual value of the articles. Improvement, however, has now been effected, and it is believed that in future it will be possible approximately to state the actual value of the produce exported. The value of shell-lac was last year entered at Rs. 37 per cwt. Although prices were lower in 1875-76, the rate is now Rs. 80, because actual values have been substituted for tariff values.

Forest produce exported, not all produced in Government forests.

60. The total entered value of forest produce exported during the year under review has amounted to Rs. 1,51,17,000, which is more than double the gross Forest revenue of the year. But it will be remembered that the greater portion of the articles here mentioned are not the produce of the forests to which the present review relates.

Of caoutchouc, cutch, and teak, more than one-half comes from territories beyond the frontier of Assam and British Burma, and of the other articles, which are chiefly produced in British territory, a small portion only is produced in the Government forests. However, the figures given above are of value, in so far as they indicate the articles, the production of which in the Government forests should be encouraged.

Myrobalams.

61. Under the name myrobalams are classed the dried fruit of *Phyllanthus emblica* (the consumption of which in India for tanning and dyeing is very considerable), of the Bahera (*Terminalia bellerica*), and of the Harra (*Terminalia chebula*). Harra is the article chiefly exported. The tree is found in many parts of India; it abounds on the highlands of the Satpura range and other hills in Central India, and it is most desirable to encourage the spread of this tree in the reserves of Berar and the Central Provinces.

Ornamental woods.

62. The export of ornamental woods from India is yet insignificant. Repeated efforts have been made to bring to notice the numerous valuable woods which the forests of Burma, the Andamans, Assam, Eastern Bengal, and other provinces produce; but hitherto not much progress has been made in this respect.

The sandalwood sold during the year on account of Government in Mysore and Coorg was as follows:—

				Amount realized. Per ton.	Amount realized. Total.
				Rs.	Rs.
Mysore	good wood	765	tons	372	2,84,871
	inferior wood	157¼	„	14	2,261
Coorg	good wood	90	„	570	51,368
	inferior wood	3½	„	56	169
	Total	1,016½	„	333	3,38,669

63. The quantities of teak timber in Burma, brought from Government forests in British territory, those imported from foreign territory, and exported from Rangoon and Moulmein were as follows, as compared with the average quantities during the last five years :— Teak.

	Yield of Government forests in British Burma.	Imports from Foreign Territory	Exports from Rangoon and Moulmein.
	(In tons of 50 cubic feet.)		
Average of 5 years from 1870-71 to 1874-75 . .	45,290	110,280	103,567
1875-76 . . .	46,597	212,950	162,164

As already stated, only 60,600 tons of the quantity exported were carried to non-Indian ports, chiefly to the United Kingdom, the rest was sent to Bombay (44,000 tons), to Calcutta (36,000 tons), to Madras (16,000 tons), and to other Indian ports (6,000 tons).

64. Statement III appended to this review gives the Forest revenue and expenditure of all provinces during the past 12 years, the figures being arranged as usual. Financial retrospect.

As regards gross and net receipts the year has been exceptionally favourable. The totals for all the provinces were as follows :—

	1873-74.	1874-75.	1875-76.
	Rs.	Rs.	Rs.
Receipts . . .	70,04,751	64,75,829	74,52,015
Charges . . .	41,47,214	44,91,173	43,35,781
Surplus .	28,57,537	19,84,656	31,16,234

65. The chief causes of the exceptionally large gross and surplus revenue of the year were, as already explained in paragraph 51, the large realizations on account of timber sales in Burma, the Punjab, and the Central Provinces, and on account of the sales of sandalwood in Coorg. To this must be added the steady increase of Forest revenue in the Central Provinces and Bengal. In Bengal there has not yet been any considerable increase in the surplus, the charges having hitherto increased *pari passu* with the receipts. This is due to the circumstance that an efficient administration and the demarcation of reserves was not commenced in earnest and on an adequate scale until 1873, and that then it became necessary to devote attention chiefly to the work of demarcation. In the Central Provinces, on the other hand, a comparison of receipts and charges shows the satisfactory result of a steady increase, subject to occasional fluctuations, both of the gross and surplus receipts during the last 12 years. The reason is that in the Central Provinces, efficient forest administration and the demarcation of the reserves was commenced in 1863, ten years before a commencement in earnest was made in Bengal. Exceptionally high revenue in 1875-76.

This remark must not, however, be misunderstood. The growing surplus revenue in the Central Provinces is not due directly to any surplus revenue yielded by the demarcated reserves, for these are only worked sparingly and are not yet self-supporting. The growing surplus revenue is due to the steadily increasing demand for wood, bamboos, and other forest produce in nearly all districts. This demand is as yet chiefly supplied from the unreserved forests, but this demand is supplied from these forests under a liberal system with few restrictions. Such a system would not be justified, had not adequate progress been made in the demarcation of permanent forest estates. What I desire to urge is this, that as long as Forest administration in any province attempts the impossible task of protecting the forest growth all over the entire waste and forest which may be at the disposal of Government, the result must necessarily be the attempt to protect the forest growth over the whole of this extensive area by means of a vast system of restrictions and control, which are expensive, and which annoy and harass the people without either producing a large surplus revenue, or providing for the future requirements of the country. On the other hand, as soon as forest demarcation has commenced on an adequate scale in any district or province, and as soon as the future requirements of the country have been secured by constituting, protecting, and improving reserved forests of sufficient extent, the management of the remaining Government forest lands, commonly known as unreserved forests, may be organized, chiefly with the view of

producing revenue and of satisfying the requirements of the people in the matter of wood, grass, and other forest produce. It must not, however, be forgotten that the efficient protection and steady improvement of the reserved forests by the exclusion of fires and otherwise are essential conditions of success in the direction here indicated.

British Provinces.

66. Excluding Mysore and Berar, the surplus forest revenue from the British provinces was as follows :—

	1873-74. Rs.	1874-75. Rs.	1875-76. Rs.
The Presidency of Bengal .	18,25,531	12,94,640	22,86,840
" " Madras .	1,11,010	(Def. 33,546)	(Def. 3,724)
" " Bombay .	4,82,553	4,07,875	4,70,195
TOTAL .	24,19,094	16,68,969	27,53,311

A glance at the figures recorded in Statement III will show that during the last twelve years the gross receipts and surplus Forest revenue in the Bombay Presidency have, subject to the usual fluctuations, remained nearly stationary. In the Presidency of Madras the annual gross receipts have fluctuated during the same period between Rs. 3,12,000 and 4,96,000; but the charges having risen considerably, Forest administration in that Presidency during three out of the last four years has resulted in a deficit.

In the British provinces under the Government of India, the gross receipts have been more than doubled during the twelve years since 1864, and though the charges have also risen largely, there has been a considerable increase in the average annual surplus revenue. The chief advantage gained in these provinces, however, is that large Government estates have been formed which, if maintained and duly protected and improved, will provide a permanent supply for the requirements of the towns and agricultural population in their vicinity, and be a source of strength, both financially and otherwise, to the British Government in India.

Conclusion.

67. The preparation of this review was delayed by the late receipt of the Punjab Annual Forest Report for 1875-76, which, with the orders thereon of the local Government, was received in May 1877. Since then the writer of this review was for several months disabled by continued attacks of malarious fever, contracted during his inspection tours in Berar and the Central Provinces, and this is the cause of the late appearance of the present review.

STATEMENT I.

Summary of Revenue and Expenditure during the year 1875-76.

Budget Headings.		Bengal.	North-Western Provinces.	Punjab.	Oudh.	Central Provinces.	British Burma.	Coorg.	Assam.	Ajmere.	Surveys.	Total of British India.	Mysore.	Berar.	Total of Mysore and Berar.	Grand Total of all Provinces.
Receipts—		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—Revenue from timber and other forest produce removed by Government agency	(I. 1, *a*, *b* and *c*)	57,289	5,55,121	6,64,926	1,31,954	2,24,664	13,97,669	77,584	9,600	...	...	31,18,807	3,73,872	10,514	3,84,386	35,03,193
II.—Revenue from timber and other forest produce removed by consumers or purchasers—																
1. Timber, wood, charcoal, and bamboos	(I. 2 *a* and *b*)	1,08,179	3,19,532	55,932	1,26,135	1,52,774	36,564	...	22,993	57	...	8,22,166	10,920	78,290	89,200	9,11,366
2. Grazing dues and sale of grass	(II. 1)	2,909	35,256	1,62,488	25,426	1,78,399	10	93	50	12	...	4,04,633	3,515	1,21,880	1,25,495	5,30,128
3. Minor produce	(II. 2)	19,944	45,196	6,210	2,260	82,535	...	26,467	22,450	25	...	2,05,067	51,529	19,631	71,160	2,76,227
III.—Revenue from confiscated drift and waif wood	(I. 3)	343	4,843	542	2,906	3,266	32,289	597	73	...	...	44,859	1,927	794	2,721	47,580
IV.—Duty on produce of foreign and private forests	(III. 1 and 2)	...	...	...	...	...	2,98,761	...	15,064	...	...	3,13,825	...	...	...	3,13,825
V.—Miscellaneous	(IV. 1, 2 and 3)	9,310	9,750	15,644	5,977	83,697	13,727	2,726	37,192	316	...	1,78,539	14,508	1,618	16,126	1,94,665
Total Receipts		1,98,274	9,69,698	9,05,742	2,94,658	7,25,335	17,79,020	1,07,457	1,07,392	410	...	50,87,896	4,56,271	2,32,817	6,89,088	57,76,984
Expenditure.—*A, Conservancy and Works*—																
I.—Charges on timber and other forest produce removed by Government agency	(I. 1, *a*, *b* and *c*)	29,984	2,76,098	2,19,418	1,00,978	99,817	4,93,861	18,473	2,092	58	...	12,40,729	72,692	1,185	73,877	13,14,606
II.—Charges on timber and other forest produce removed by consumers or purchasers.	(I. 2, *a* and *b*) (II. 1 and 2)	695	24,056	2,097	4,299	81,265	2,616	...	2,322	...	...	1,17,350	480	8,744	9,224	1,26,574
III.—Charges on other revenue	(I. 3 and VI)	1	373	...	1,577	...	34,078	...	...	...	...	36,529	146	...	146	36,675
IV.—Rent of leased forests	(V.)	...	10,351	28,351	...	...	...	...	50	...	...	38,752	...	17,120	17,120	55,872
V.—Charges on live and dead stock—																
1. Purchase of cattle	(VIII. 1)	10,894	...	...	...	62	24,720	...	3,717	50	...	39,443	...	...	...	39,443
2. Hire, keep, and feed of cattle	(VIII. 2 and 3)	3,490	7,621	216	4,144	14,114	16,348	43	2,818	93	1,912	50,804	...	2,327	2,327	53,131
3. Plant, tools, and instruments	(IX. 1 and 2)	2,316	4,082	1,698	2,153	1,426	13,612	...	2,394	220	8	27,909	714	1,128	1,842	29,751
VI.—Communications and buildings	(VII. 1 to 4)	10,306	44,308	7,913	13,093	23,294	12,668	283	4,821	1,405	...	1,18,071	3,591	2,265	5,856	1,23,927
VII.—Demarcation, survey, and improvement of natural forests.	(III. 1 to 3) (IV. 1, *a* to *d*)	3,126	21,331	14,626	7,778	16,739	13,033	6,571	7,832	10,615	3,214	1,04,865	7,674	3,473	11,147	1,16,012
VIII.—Formation and maintenance of artificial forests	(IV. 2, *a* to *d*)	7,172	2,197	43,299	...	177	40,944	594	6,951	...	...	1,01,364	25,056	4,794	29,850	1,31,214
IX.—Miscellaneous	(X. 1 to 3)	271	518	880	14,928	3,629	8,635	47	160	517	...	29,585	419	1,251	1,670	31,255
Total A Charges		68,255	3,91,385	3,18,498	1,48,950	2,40,523	6,60,515	25,991	33,187	12,963	5,134	19,05,401	1,10,772	42,287	1,53,059	20,58,460
B.—Establishments—																
I.—Salaries		57,870	1,19,563	1,83,094	38,140	1,06,396	1,27,004	7,914	23,970	11,996	43,935	7,19,782	1,05,626	38,786	1,44,412	8,64,194
II.—Travelling allowances		7,751	19,972	38,087	9,408	17,599	18,432	3,320	4,000	1,471	8,191	1,28,221	14,393	6,146	20,529	1,48,750
III.—Contingencies		5,210	6,994	14,547	1,917	6,245	8,799	454	827	916	1,743	47,652	4,511	3,654	8,165	55,817
Total B Charges		70,831	1,46,529	2,35,728	49,465	1,30,240	1,54,235	11,688	28,697	14,383	53,859	8,95,655	1,24,520	48,586	1,73,106	10,68,761
GRAND TOTAL OF EXPENDITURE		1,39,086	5,37,914	5,54,226	1,98,415	3,70,763	8,14,750	37,679	61,884	27,346	58,993	28,01,056	2,35,292	99,873	3,26,165	31,27,221
Surplus		59,188	4,31,784	3,51,516	96,243	3,54,572	9,64,270	69,778	45,418	...	...	22,86,840	2,20,979	1,41,944	3,62,923	26,49,763
Deficit		...	...	...	...	...	...	...	...	26,936	58,993	...	...	...	...	...

STATEMENT II.

Quantity of Timber, Wood, and Bamboos brought to depôts from Government Forests and sold on account of Government.

Provinces.	Brought to Depôt.		Sold.		Description.	Whence brought.
	Pieces.	Cubic feet.	Pieces.	Cubic feet.		
Bengal	15.384	77,297	19,793	55,900	Chiefly sâl and sissu	Reserves.
North-Western Provinces	460,909	310,021	488,976	Not given.	Chiefly sâl and deodar	Reserves and open forests.
Punjab	91,375	703,615	168,343	948,127	Principally deodar and pine	Reserves and leased forests.
Oudh	4,501	139,883	606	58,226	Chiefly sâl	Reserves.
	(13,496	Maunds	119,475	Maunds	Firewood.)	
Central Provinces	40,871	253,845	57,277	138,434	Chiefly teak and sâl	Chiefly from reserves.
	(58,709	.....	66,437	.....	Bamboos)	Chiefly from unreserved forests.
British Burma	81,888	2,579,730	167,194	2,111,425	Chiefly teak	Chiefly from undemarcated forests.
Assam	1,179	13,845	897	9,867	Chiefly sâl and ajhar	Mostly reserves.
Coorg	351	6,749	427	8,300	Teak	Reserves.
	6.704	16,195	5,318	14,426	Junglewood	
	(143,514	.....	164,762	.....	Bamboos)	
	(2,377	.....	2,139	.....	Cartloads of firewood)	
	(5,992	.....	6,009	.....	Fire-sticks)	
	(85½	Tons	90½	Tons.	Sandalwood)	
	1	Ton.	3½	Tons.	Inferior sandalwood.	
Mysore	11,431	25,523	12,368	34,269	Teak	Reserves and district forests.
	24,605	90,188	33,094	83,639	Junglewood	
	(314,999	(Number)	396,330	(Number.)	Bamboos)	
	(657	Head-loads	657	Head-loads.	Fibre)	
	(920	Tons	766	Tons.	Sandalwood)	
	(135	Tons	157	Tons.	Inferior sandalwood)	
Berar	39,926	Not given completely.	53,399	Not given.	Principally teak and babul	Reserves and district forests.
Total	7,79,124	4,216,891	1,007,692	3,462,613		

STATEMENT III.

Receipts and Charges of the Forest Department throughout India during the twelve years from 1864-65 to 1875-76.

RECEIPTS.

Provinces.	1864-65.	1865-66.	1866-67 (11 months.)	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bengal	...	38,584	50,555	75,687	2,24,546	1,13,753	1,19,678	1,39,088	1,49,851	1,16,633	1,85,933	1,98,274
North-Western Provinces	6,39,010	6,50,401	5,77,954	5,11,191	6,53,389	7,26,255	3,65,076	10,33,134	16,42,856	16,29,496	10,85,947	9,69,698
Punjab	2,95,730	2,08,050	2,31,470	2,79,297	3,45,164	3,94,132	10,40,368	7,35,002	6,52,994	7,32,540	8,34 874	9,05,742
Oudh	54,634	1,19,969	2,01,246	66,453	1,31,822	1,06,822	60,181	1,37,767	2,96,258	3,03,181	2,77,411	2,94,658
Central Provinces	89,307	2,02,644	3,67,095	3,49,491	3,50,536	4,16,020	6,58,120	4,47,764	4,81,673	5,68,367	6,61,779	7,25,335
British Burma	9,36,233	8,98,629	4,24,053	6,47,590	8,16,171	9,84,773	8,18,124	7,72,399	8,27,469	10,68,621	10,74,802	17,79,020
Coorg	1,02,218	1,08,257	31,934	77,746	74,448	1,08,1 2	74,067	92,453	84,424	1,10,079	58,012	1,07,457
Ajmere	...	...	..	...	...	..	...	...	24	508	203	410
Assam	..	...	...	...	...	...	...	...	...	62,726	64,749	1,07,302
Surveys	...	...	...	...	...	...	...	...	...	...	...	...
Total	21,17,132	22,26,534	18,84,907	20,07,455	25,96,076	28,49,907	31,35,614	33,57,607	41,35,549	45,92,151	42,43,710	50,87,896
Madras	3,11,778	3,26,204	3,38,608	4,24,184	3,91,179	4,95,789	3,39,762	4,18,882	4,18,767	4,64,194	3,64,326	4,26,359
Bombay and Sind	10,70,210	10,07,610	8,21,268	8,84,245	12,13,482	12,35,257	11,77,425	11,50,210	11,46,404	11,88,090	12,23,995	12,48,672
Total Revenue (British India)	34,99,120	35,60,348	30,44,183	33,15,884	42,00,737	45,80,953	46,52,801	49,26,699	57,00,720	62,44,435	58,32,031	67,62,927
Mysore	3,16,331	3,42,959	2,66,020	4,10,012	3,51,176	2,95,218	3,37,669	3,99,511	3,76,185	4,97,060	3,83,124	4,56,271
Hyderabad	2,368	15.106	43,574	53,446	84,556	1,45,481	1,77,329	1,55,544	2,59,861	2,63,256	2,60,674	2,32,817
Total Revenue (Mysore and Hyderabad)	3,18,699	3,58,065	3,09,594	4,63,458	4,36,032	4,40,699	5,14,998	5,55,055	6,36,046	7,60,316	6,43,798	6,89,088
GRAND TOTAL OF REVENUE	38,17,819	39,18,413	33,53,777	37,79,342	46,36,769	50,21,652	51,67.799	54,81,754	63,36,766	70,04,751	64 75,829	74,52,015

STATEMENT -III—*continued.*

A—Expenditure on Conservancy and Works.

PROVINCES.	1864-65.	1865-66.	1866-67 (11 months.)	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bengal	2,092	19,480	89,326	1,41,382	95,581	61,004	26,272	43,907	28,526	28,552	39,062	68,255
North-Western Provinces	3,29,983	2,06,272	2,28,186	2,04,249	3,10,303	2,95,969	5,41,957	8,16,519	8,67,314	8,21,813	7,16,878	3,91,385
Punjab	1,62,120	1,94,110	1,76,950	1,75,920	1,93,516	5,55,375	10,30,005	4,78,003	5,45,068	3,54,457	4,19,305	3,18,498
Oudh	52,797	38,886	38,001	70,569	59,566	63,180	52,872	79,412	87,201	1,51,178	1,58,161	1,48,950
Central Provinces	35,610	38,504	46,817	1,13,068	1,86,925	3,65,801	1,95,251	1,24,621	1,33,666	1,67,010	1,78,513	2,40,523
British Burma	1,77,158	2,21,739	2,04,591	2,25,049	3,22,981	3,11,404	2,89,445	2,45,514	2,03,929	3,32,391	5,31,841	6,60,515
Coorg	4,688	3,995	4,425	5,354	7,175	22,851	14,822	20,71	18,324	23,001	23,773	25,991
Ajmere	...	...	...	...	...	...	...	...	4,878	15,777	17,753	12,963
Assam	...	...	...	...	...	...	...	...	...	18,901	31,138	33,187
Surveys	...	...	...	...	...	...	...	...	8,303	7,420	3,906	5,134
TOTAL	7,64,448	7,22,986	7,88,296	9,35,591	11,76,047	16,75,584	21,50,624	18,08,690	18,97,209	19,20,500	21,20,330	19,05,401
Madras	94,657	1,36,528	1,14,251	1,62,037	1,32,693	1,46,821	1,56,779	1,94,814	3,03,735	1,75,370	2,21,864	2,39,945
Bombay and Sind	3,17,699	5,63,067	4,36,470	3,32,175	3,87,412	3,28,985	3,84,638	3,27,729	4,34,612	4,11,547	5,20,049	4,80,801
TOTAL (BRITISH INDIA)	11,76,804	14,22,581	13,39,017	14,29,803	16,96,152	21,51,390	26,92,041	23,31,233	26,35,556	25,07,417	28,62,243	26,26,147
Mysore	14,022	42,979	32,165	52,317	59,274	44,252	81,061	87,326	95,959	1,12,460	1,08,401	1,10,772
Hyderabad	...	...	...	2,184	6,552	22,018	43,034	62,759	45,062	44,117	45,514	42,287
TOTAL (MYSORE AND HYDERABAD)	14,022	42,979	32,165	54,501	65,826	66,270	1,24,095	1,50,085	1,41,021	1,56,577	1,53,915	1,53,059
GRAND TOTAL	11,90,826	14,65,560	13,71,182	14,84,304	17,61,978	22,17,660	28,16,136	24,81,318	27,76,577	26,63,994	30,16,158	27,79,206

STATEMENT III—*continued.*

B.—Expenditure on Establishments.

PROVINCES.	1864-65.	1865-66.	1866-67 (11 months).	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bengal	6,604	16,292	14,881	24,223	30,676	34,870	60,186	64,129	71,090	56,936	60,341	70,831
North-Western Provinces	65,739	86,242	83,711	85,139	1,01,475	1,27,441	1,33,928	1,53,751	1,51,698	1,44,693	1,38,997	1,46,529
Punjab	84,665	77,968	78,680	97,955	1,15,828	1,58,279	2,03,951	2,27,321	2,50,874	2,42,705	2,27,175	2,35,728
Oudh	27,154	19,883	21,571	23,065	29,615	42,090	47,119	47,269	56,219	48,256	46,666	49,465
Central Provinces	61,946	74,994	81,041	99,031	1,07,730	1,08,445	1,12,182	1,07,059	1,14,171	1,16,546	1,15,726	1,30,240
British Burma	86,081	90,327	80,544	1,03,339	99,191	1,10,058	1,11,293	1,32,935	1,32,095	1,42,140	1,30,797	1,54,235
Coorg	4,201	8,654	7,127	8,610	9,301	10,231	9,777	10,267	11,340	11,708	14,226	11,688
Ajmere	.....	.....	.....	.....	.....	.....	.....	.....	8,177	8,563	8,813	14,383
Assam	.....	.....	.....	.....	.....	.....	.....	.....	.....	31,721	28,385	28,697
Surveys	.....	.....	.....	.....	.....	.....	.....	.....	12,875	42,852	57,614	53,859
Total of Establishment Charges	3,36,390	3,74,360	3,67,555	4,41,362	4,93,816	5,91,414	6,78,436	7,43,031	8,08,539	8,46,120	8,28,740	8,95,655
TOTAL OF ALL CHARGES	11,60,838	10,97,346	11,55,851	13,76,953	16,69,863	22,66,998	28,29,060	25,51,721	27,05,748	27,66,620	29,49,070	28,01,056
Madras	95,300	1,17,054	1,02,920	1,26,223	1,37,779	1,39,870	1,38,081	1,50,902	1,74,412	1,77,814	1,76,008	1,90,138
Bombay	2,10,352	2,11,987	2,10,973	2,14,902	2,39,711	2,15,811	2,38,125	2,57,035	2,78,430	2,93,990	2,96,071	2,97,676
Total of Establishment Charges (British India)	6,42,042	7,03,401	6,81,448	7,82,547	8,71,306	9,47,095	10,54,642	11,50,968	12,61,381	13,17,924	13,00,819	13,83,469
TOTAL OF ALL CHARGES (BRITISH INDIA)	18,18,846	21,25,982	20,20,465	22,12,350	25,67,458	30,98,485	37,46,683	34,82,201	38,96,937	38,25,341	41,63,062	40,0[illegible],616
Mysore	53,018	54,768	53,823	57,725	60,677	59,998	64,381	71,776	96,159	1,23,773	1,28,321	1,24,520
Hyderabad	478	8,991	13,718	16,157	27,553	58,692	38,938	38,071	37,994	41,523	45,875	48,586
TOTAL OF ESTABLISHMENT CHARGES (MYSORE AND HYDERABAD)	53,496	63,759	67,541	73,882	88,230	1,18,690	1,03,319	1,09,847	1,34,153	1,65,296	1,74,196	1,73,106
GRAND TOTAL OF ESTABLISHMENT CHARGES	6,95,538	7,67,160	7,48,989	8,56,429	9,59,536	10,65,785	11,57,961	12,60,815	13,95,534	14,83,220	14,75,015	15,56,575
GRAND TOTAL OF ALL CHARGES	18,86,364	22,62,720	21,20,171	23,40,733	27,21,514	32,83,445	39,74,097	37,42,133	41,72,111	41,47,214	44,91,173	43,35,781

STATEMENT III—*concluded.*

C.—Surplus Revenue.

PROVINCES.	1864-65.	1865-66.	1866-67 (11 months).	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
British India, excluding Madras and Bombay	10,16,294	11,29,188	7,28,456	6,30,502	9,26,213	5,82,909	3,06,554	8,05,886	14,29,801	18,25,531	12,94,640	22,86,840
The Presidency of Madras	1,21,821	72,622	1,21,437	1,35,924	1,20,707	2,09,098	44,902	73,166	(Deficit 59,380)	1,11,010	(Deficit 33,546)	(Deficit 3,724)
" of Bombay	5,42,159	2,32,556	1,73,825	3,37,108	5,86,359	6,90,461	5,54,662	5,65,446	4,33,362	4,82,553	4,07,875	4,70,195
Total Net Revenue (British India)	16,80,274	14,34,366	10,23,718	11,03,534	16,33,279	14,82,468	9,06,118	14,44,498	18,03,783	24,19,094	16,68,969	27,53,311
Mysore	2,49,291	2,45,212	1,80,032	2,99,970	2,31,525	1,90,968	1,92,227	2,40,409	1,84,067	2,60,827	1,46,402	2,20,979
Hyderabad	1,890	6,115	29,856	35,105	50,451	64,771	95,357	54,714	1,76,805	1,77,616	1,69,285	1,41,944
TOTAL NET REVENUE (MYSORE AND HYDERABAD)	2,51,181	2,51,327	2,09,888	3,35,075	2,81,976	2,55,739	2,87,584	2,95,123	3,60,872	4,38,443	3,15,687	3,62,923
GRAND TOTAL OF NET REVENUE	19,31,455	16,85,693	12,33,606	14,38,609	19,15,255	17,38,207	11,93,702	17,39,621	21,64,655	28,57,537	19,84,656	31,16,234

Government Central Press.—No 507 B., A., & C.—18-12-77—450.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN THE

LOWER PROVINCES OF BENGAL

FOR THE YEAR

1875-76.

BY

W. SCHLICH, PH.D.,

Conservator of Forests, Bengal.

Calcutta:

PRINTED AT THE BENGAL SECRETARIAT PRESS.

1876.

No. 48, dated Darjeeling, the 20th July 1876.

From—Dr. W. Schlich, Conservator of Forests, Bengal,

To—The Secretary to the Government of Bengal, Financial Department.

I have the honor to submit the annual administration report of the Forest Department for the year 1875-76, together with an appendix and a map giving a detailed account of the reserved State forests in the Palamow Forest Division. The map exhibiting the forest reserves in the Palamow Division, and the manner in which they are grouped in ranges and beats, seem to me very instructive, and I should be glad if it could be printed and appended to the report.

2. I beg that 25 copies of the report may be forwarded to me as soon as it has been printed, for distribution to the officers of the department.

TABLE OF CONTENTS.

	Para.
Introductory	1
SECTION I.—Inspection of Forests	4
Darjeeling	4
Shahabad	7
Rhotas Plateau	9
Rhotas slopes	10
Rehull Plateau	11
Bunsakoh	12
Sonthal Pergunnahs	15
Unexplored Tracts	18
SECTION II.—Formation of Reserves	19
Darjeeling Division	22
Julpigoree Division	23
Apalchand Reserve	24
Proposed Reserves	25
Palamow Division	26
Soonderbuns Division	27
Chittagong Division	29
Matamahari Reserve	30
Singbhoom Division	31
SECTION III.—Protection and Improvement of Forests	33
Establishments	33
Forest Law	35
Breach of Forest Rules	36
Demarcation of Boundaries	44
Fire Suppression	53
Creeper Cutting	57
Roads	61
Buildings	64
SECTION IV.—Plantations	69
Darjeeling Division	70
Rangbul Plantation	70
Dhobi Jhora Plantation	75
Bamunpokri Plantation	76
Rangirum	86
Sunderbuns Division	87
Chittagong Division	91
SECTION V.—Yield of the Forests	95
Darjeeling Division	96
Julpigoree Division	106
Palamow Division	112
Soonderbuns Division	113
Chittagong Division	122
SECTION VI.—Financial	125
SECTION VII.—General	133
Elephants	133
Conservator's Tours	134
Services of Officers	135

Statements exhibiting the Annual Accounts.

Form No. 21.—Annual summary of revenue and expenditure.
" " 22.— " Abstract account of cash transactions.
" " 23.— " Statement of outstandings and liabilities.
" " 24.—Statement of timber brought to depôt.
" " 25.—Annual timber account.
" " 26.—Statement showing the amount realized on account of the different classes of timber.
" " 27.—Statement showing the amount expended on account of timber received from the different forest divisions.
" " 28.—Annual account of revenue realized.
Area of reserved forests.
" of unreserved forests.
" of plantations.
" of forest tracts protected from fire.
Prosecutions for breaches of forest rules.

APPENDICES.

Appendix A.—Detailed account of the reserved State forests in the Palamow Forest Division
Appendix B.—Map of the Palamow reserved State forests, showing the ranges and beats.

PROGRESS REPORT

OF

FOREST ADMINISTRATION IN BENGAL

For the Year 1875-76.

By W. SCHLICH, Ph.D.,

Conservator of Forests, Bengal.

INTRODUCTORY.

The organization of the Forest Department in Bengal has not yet been completed. In the annual report for 1874-75 it has been shown that the area of reserved forests rose during that year from 120 to 1,467 square miles. During the year under review (1875-76) the area has been further augmented, so that it stood at 2,585 square miles on the 31st March 1876. Since then further areas have been added, and others are under consideration.

2. In the same way as the centre of gravity of the annual report of this department had last year been shifted from Section I (Inspection of Forests) to Section II (Formation of Reserves), so has now a beginning been made to shift it to Sections III and V (Protection, Improvement and Working of the Forests).

3. During the year under review our chief efforts, besides the formation of additional reserves, have been directed towards the demarcation of the Government forest estates, their protection against injury, their working according to well-considered working plans, creeper cutting, and the construction of roads and rest-houses, so that after another year or two we may approach a fairly normal state of organization and working.

SECTION I.—INSPECTION OF FORESTS.

DARJEELING DIVISION.

4. During the year under review the fir forests in this district have been examined by Mr. Gamble, from whose report the following data have been obtained.

The forests are situated on the Singalila ridge, which forms the western boundary of the Darjeeling district, and they cover the top and eastern slopes of that ridge from an elevation of about 12,000 feet down to about 8,000 feet, occupying an area of from 25 to 30 square miles. The upper half of the area is stocked chiefly with *Abies Webbiana*, the lower half with *Abies Dumosa*, and over the whole is found here and their *Juniperus recurva*. The former two grow into large trees, whereas the latter rarely reaches a height of more than 30 feet. Neither the wood of the *Abies Webbiana* nor that of *Abies Dumosa* is valuable, when compared with other woods growing in the Darjeeling district,

and they both are inferior to the wood of *Pinus longifolia*, growing at low elevations. The local consumption is very small, and it would never pay to export the timber to Darjeeling or places further removed, owing to the inferiority of the timber and the inaccessibility of the locality. On the other hand, it appears highly advisable that the area should be kept under forest for climatic reasons, the regulation of the supply of water, and the prevention of landslips.

5. The forests being the private property of Cheeboo Lama, the Conservator cannot, for the above reasons, propose any interference of the Forest department, but would suggest that the Deputy Commissioner of the district may exercise his influence in preventing the destruction of the forests by suggesting, and, if necessary, by insisting upon, the abolition of the barbarous practice of barking the trees, and by allowing grazing only in rotation. For the latter purpose the Conservator would suggest closing half the area against grazing for 10 years, and then the other half, opening the one closed first. With these two simple measures carried out, the Conservator is fairly convinced the forest will hold its own against any attacks that are likely to be made on it. These views have been *approved of by Government.*

6. In addition to the above, forest tracts in Shahabad and the Sonthal Pergunnahs have been inspected during the year. These have been reported on some years ago; but as the information gathered during the past year is more detailed than that recorded before, it has been entered here.

SHAHABAD.

7. In the Sasseram Sub-division of this district three blocks of jungle land situated in pergunnah Rohtas, and extending over an area of 38·3 square miles, are at the disposal of Government. They are situated on the left or western bank of the river Soane, and the forest produce derived from them can be carried by land or water into the Shahabad, Gya, Sarun, and Patna districts. These are all poor in forests, and consequently the Rohtas blocks are of great value.

8. The following data have been compiled from Mr. Johnston's report. The areas actually available are as follows:—

		Square miles.	Acres.
1.	The Rohtas plateau	9·43	6,035
2.	„ ditto slopes	10·73	6,867
3.	„ Rehull plateau	12·38	7,923
4.	„ Bunsakoh	5·76	3,686
	Total	38·30	24,511

9. *The Rohtas plateau*, situated at 1,200 to 1,400 feet above the sea. The northern half of the area may be considered wooded, whereas the southern half is almost completely denuded. But even the former is very poorly stocked at present. The predominating trees are—

Sida	*Lagerstrœmia parviflora.*
Salai	*Boswellia thurifera.*

And next to these—

Piar	*Buchanania latifolia.*
Dhauta	*Anogeissus latifolia.*
Persar (?)	*Cassia fistula.*
Sâl	*Shorea robusta.*
Asan	*Terminalia tomentosa.*
Khair	*Acacia catechu.*
Then	*Diospyros melanoxylon*—the Ebony.

Of the last 4 species only a few seedlings were observed. Bamboos are scarce; Sida, Dhauta, and Persar, are good woods; Piar is of tolerable quality; and Salai is very inferior. Some of the sida trees are of fair size, but on the whole the forest is very much reduced and badly stocked. Valuation surveys extending

over 167·81 acres, equal to 2·8 per cent. of the total area, show the following average contents per acre of the fifteen most important species:—

Under	18″ girth	=	23·95	trees.
	18″ to 3′ „	=	2·30	„
	3′ to 4′ 6″ „	=	0·52	„
	4′ 6″ to 6′ „	=	0·29	„
Above	6′ „	=	0·13	„
	Total ...		27·19	trees per acre.

Of these, 20·76 are sida, only 0·11 sâl (all seedlings), and 0·14 ebony.

Of minor produce the savi grass is much prised for ropes, and exported from the plateau.

There are two villages on the plateau—Gajimaidan, containing about 25 houses, and Sukpura, with 17 houses—the inhabitants of which cultivate in the denuded area.

10. *The Rohtas slopes.*—With the exception of the upper precipitous parts, the slopes are tolerably well wooded, though unequally. Bamboos are plentiful, and exported in large quantities. Valuation surveys extending over an area of 203·4 acres, equal to 3 per cent. of the total area, show the following average contents per acre of the fifteen more important species:—

Under	18″ girth	=	49·65	trees.
	18″ to 3′ „	=	3·08	„
	3′ to 4′ 6″ „	=	1·08	„
	4′ 6″ to 6′ „	=	0·51	„
Above	6′ „	=	0·14	„
	Total ...		54·46	„

Of these, 13·74 are persar, 12·65 khair, 8·71 sida, 8·41 dhauta, 7·66 then (ebony), and 1·14 sâl.

It will be observed that the slopes contain about twice as many trees per acre as the plateau, and that there is a good proportion of khair and ebony, both valuable woods. Of sâl there is very little, though more than on the plateau. Mature timber is very scarce. Neither villages nor cultivated lands are found on the slopes.

11. *The Rehull plateau.*—About three-fourths of the plateau are well wooded, and the remaining fourth is land which has been under cultivation. Surveys extending over 123·05 acres, equal to 1·6 per cent. of the total area, show the following results, comprising fifteen species:—

Under	18″ girth	=	75·12	trees.
	18″ to 3′ „	=	7·37	„
	3′ to 4′ 6″ „	=	2·05	„
	4′ 6″ to 6′ „	=	0·64	„
Above	6′ „	=	0·23	„
	Total ...		85·41	„

Of these, 48·60 are sâl, 10·23 asan, 9·88 then (ebony), 8·29 sida, 5·86 dhauta, and 2·22 mahua (*Bassia latifolia*).

This forest may therefore be called a sâl forest with a fair admixture of ebony and other valuable woods.

Although the forest does not contain much mature timber at present, numbers of large stumps prove how well the trees will grow if allowed to do so.

12. *The Bunsakoh.*—Surveys extending over 61·065 acres, equal to 1·6 per cent. of the total area, show the following numbers of trees of the fifteen most important species per acre :—

Under		18″	girth	= 69·16	trees.
	18″ to	3′	„	= 6·72	„
	3′ to 4′	6″	„	= 2·15	„
	4′ 6″ to	6′	„	= 0·82	„
Above		6′	„	= 0·41	„
		Total	...	79·26	„

Of these, 23·08 are then (ebony), 15·62 khair, 13·31 dhauta, 11·06 asan, 5·99 persar, 5·80 sida, 0·05 sâl.

The block is described as an ebony forest, in which that tree grows to fine dimensions, the boles being straight and long. It is fairly stocked all over, and there are neither villages nor cultivation in it.

13. To sum up, there are the following areas :—

Names of Blocks.					Under forest (estimated).	Cultivated or bare land (estimated).
					Acres.	Acres.
Rohtas	block (plateau and slopes)	about		...	9,902	3,000
Rehull	„	...	...	...	5,923	2,000
Bunsakoh	„	...	...	...	3,686	.....
			Total	...	19,511	5,000

The forest on the Rohtas plateau is inferior; that on the slopes is tolerably good. They both are classed as mixed forest containing very little sâl or ebony, but a good deal of bamboos and a fair amount of sida, persar, and khair. The Rehull block is covered with sâl and a fair amount of ebony. The Bunsakoh block may be styled a mixed forest with ebony as the prevailing tree.

None of the blocks contain much large timber now, but there is a fair amount of young growth, and sufficient evidence to show that large timber will be produced if the forests are protected against reckless cutting.

14. Orders have been passed, after the close of the year under review, that the areas under forest are to be gazetted as Government reserved forests.

SONTHAL PERGUNNAHS.

15. For many years past the question what should be done in the way of forest conservancy in the Sonthal Pergunnahs has been discussed, and it has not been finally answered as yet.* However, so much seems settled, that only in a small portion, situated between Doomka and Mooraroe on the Loop line of the East Indian Railway, real forest conservancy can be attempted, if at all. Mr. Johnston visited that locality during the past year, and from his report the Conservator gathers the following information.

16. The tract of country examined by Mr. Johnston is divided by the Bansloe river, running west and east and passing Kuskira, a place 21 miles south-west of Mooraroe. There is a marked difference between the tract north of the Bansloe and that south of it. The former is inhabited by Doomka Paharias, who have cultivated all available ground, the consequence being that only small patches of forest scattered over the country remain, which are too small in area to be taken up as Government reserves.

17. The tract situated to the south of the Bansloe is less densely populated, and contains still a large amount of forest, chiefly composed of sâl. Here a block of 43 square miles, composed of undulating ground, has been described as worth reserving. It is estimated that out of the above-mentioned area 35 square miles are under forest, whereas 8 square miles are cultivated by the people of ninety-one small villages. By altering the boundaries it

* Since the above was written an area of about 40 square miles has been gazetted as a reserve.

would be possible to reduce the number of villages to forty-eight, whereby the area would be reduced to 40 square miles.

The forest consists chiefly of sâl of very fine and vigorous growth, though poor in mature timber. In fact there are hardly any trees at all above three feet in girth; but at the same time there is no doubt that, with proper protection, the forests would become very valuable, owing to the fine growth of sâl in most parts, and the position of the tract in the very heart of Bengal and within 25 miles of the East Indian Railway. Of other trees the following are most conspicuous:—

Asan (*Terminalia tomentosa*).
Dhauta (*Anogeissus latifolia*).
Then (ebony) (*Diospyros melanoxylon*).
Kusum (*Scheichera trijuga*).
Mahua (*Bassia latifolia*).

The villages are scattered over the block, but the larger number is found in the northern part. If it should be found practicable to provide for the people elsewhere, or to settle them on a portion of the area, it would be highly advisable to reserve the rest of the area, comprising about 30 square miles. The necessary inquiries on this point are now being made by the Commissioner of the division, and it is to be hoped that this small area at least out of the whole district may be saved from destruction.

UNEXPLORED TRACTS

18. The tracts remaining unexplored are chiefly the following:—
(1) The Saranda forests in Chota Nagpore.
(2) Several other blocks in different parts of the Chota Nagpore Commissionership.
(3) The Berhampore sâl forests in the Rajshahye Commissionership.
(4) Several blocks in the Bogra district.
(5) The Mudhopore jungle in Mymensingh.
(6) The sea-shore forests in Cuttack.
(7) It is possible that some tracts may be found in Chumparun.

Most of these forests, it is hoped, will be inspected during the year 1876-77.

SECTION II.—FORMATION OF RESERVES.

19. In the same way as in 1874-75, so again has great progress been made in 1875-76 in the selection and formation of reserved State forests. The actual progress will be seen from the subjoined table:—

Divisions	In square miles.			Remarks.
	Area at the beginning of the year 1875-76.	Area added during the year.	Total at the end of the year 1875-76.	
Darjeeling	106	.....	106	
Julpigoree	129	30	159	
Palamow	.....	151	151	
Sunderbuns	885	314	1,199	
Chittagong	347	223	570	
Singbhoom	.....	400	400	Rough estimate
Total ...	1,467	1,118	2,585	

Thus it will be observed that the increase amounts to 1,118 square miles during the year under review, bringing the increase during the last two years up to 2,465 square miles. In addition to the above the following areas are now under consideration:—

Darjeeling Division	50	square miles.
Julpigoree "	231	"
Shahabad "	38	"
Sonthal Pergunnahs	30	"
Hazareebagh	60	"
Total ...	409	"

the greater portion of which, if not the whole, will be gazetted during the year 1876-77.

20. The natural result at this rapid increase is that the greater part of the time of the officers has been devoted to demarcation works, whereas the detailed examination of the reserves had to be temporarily suspended.

21. With regard to vegetation, the reserved areas may be classified in the following manner :—

Sâl reserves, including limited areas of sissu, and intersected by savannah tracts	766	square miles.
Darjeeling hill forest	50	„
Sunder forest	1,199	„
Chittagong mixed forest	570	„
Total ...	2,585	„

It should be specially noted that the area of sâl reserves has been largely extended during the year, and it is expected that it will finally be brought up to some 1,200 square miles, if not to more.

DARJEELING DIVISION.

22. No new reserves have been gazetted during the year. In the Dumsong Sub-division 50 square miles are under discussion.

JULPIGOREE DIVISION.

23. At the beginning of the year the following areas had been reserved :—

The Dainah sissu reserve	2	square miles.
„ Muraghat sâl „	17	„
„ Buxa plain „	110	„
Total ...	129	„
Added during the year the Apalchand reserve ...	30	„
Grand total at the end of 1875-76 ...	159	„

24. *The Apalchand Reserve.*—Gazetted by a notification dated 7th September 1875, published at page 1125 of the *Calcutta Gazette* of the 8th September 1875.

The reserve is situated on the left or eastern bank of the river Teesta, about 15 miles above the town of Julpigoree.

(1) *Area* (estimated) 19,140 acres, equal 30 square miles.

(2) *Boundaries.*—Commencing from the junction of the Gheesh and Teesta rivers, up the Gheesh and its feeder, the Lubongodheet Jhora, to the southern boundary of the Udlabary taluk, along that boundary to the Chel river; down the Chel to the northern boundary of the late Doorga Mechee's land, known as Khateagaon Rajadanga; then a demarcated line along its western boundary for about 1½ mile; then westward to the northern boundary of Binnah Ram Jemadar's land, known as Khelabari Rajadanga, to the Phuljhora nuddy; then across that nuddy, along the southern boundary of the sâl forest to the land of Mahar Ali and others, known as Kala Dooar; skirting these to the high land north of Katambari village; along the edge of that high land to the Apalchand river, excluding the land known as Shamsar Pokri; then down the Apalchand river to its junction with the Teesta; then up the Teesta to the southern boundary of the Gazliduba tea estate, round this estate, again up the Teesta to the junction with the Gheesh river.

Estimated area of the tract 19,140 acres, equal to 30 square miles.

(3) *Topographical description.*—The northern, central, and eastern parts of the reserve are situated on slightly elevated, though almost level, ground;

whereas the western part, near the Teesta, consists of somewhat lower ground. The area is drained on the west by the Gheesh and Teesta rivers, in the centre by the Apalchand, and on the north-east by the Chel river. The Gheesh and Apalchand are feeders of the Teesta, and they both join the latter above Julpigoree. The Chel joins the Dharla, which also joins the Teesta above Julpigoree.

The old Julpigoree Daling road passes through the eastern part of the reserve, and a road from Chengmari to Gazliduba through the western part.

The rainfall in the reserve may be estimated to amount to about 100 inches per year.

(4) *Soil.*—This changes from a good sandy loam in the east and in the centre to sandy river deposit near the bank of the Teesta.

(5) *Description of forest.*—The elevated part in the east and centre is stocked with sâl forest intersected by savannah tracts, and the western or lower part contains sissu and khair forest, with a good amount of safet sirris (*Albizzia elata*) and the other usual companions of sissu and khair. The sâl is accompanied, as usual, by *Dillenia pentagyna*, *Careya arborea*, *Lagerstrœmia parviflora*, and others. Many parts of the centre and east are well stocked, and the sâl exhibits very fine growth, though the proportion of trees above four feet six inches in girth is unfavourable.

(6) *Timber Depôts*, (7) *Timber markets*, (8) *Lines of Export.*—The timber will be transported to the Julpigoree depôt, where it will find a ready market. In fact there is a demand for more timber at Julpigoree than can be satisfied at present. Besides, tea plantations are being opened out around the reserve, which will require forest produce, and any surplus material in the future can easily be floated down the Teesta towards the Brahmaputra. On the whole, therefore, this reserve is, owing to its favourable position, of very great value.

(9) *Villages within the reserve.*—There are five jotes in the reserve, comprising an area of about 1,200 acres. A new settlement is now in progress in the Dooars, and endeavours are being made to accomplish exchanges of land, so that all the jotes may be excluded by the boundary to be demarcated. The results will be recorded next year.

(10) *Rights of surrounding population.*—None.

(11) *A map* of the boundaries, on a scale of two inches to the mile, has been prepared.

(12) *Working plan.*—The reserve has not yet been examined in detail, which, it is hoped, will be done during the year 1876-77; and in the meantime 400 sâl trees per year are being cut and transported to the Julpigoree depôt for the supply of the Department of Public Works and of private parties.

25. Proposals for the reservation of a further area of 231 square miles are now pending, the boundaries of the several blocks having been selected by the Conservator of Forests during the past cold season. In a small portion of the division, namely the area between the Rehtee and Torsa rivers, additional blocks will have to be selected during the year 1876-77.

PALAMOW DIVISION.

26. By a notification dated 10th August 1875, published at page 1032 of the *Calcutta Gazette* of the 11th August 1875, thirty-seven blocks of land have been declared Government reserved forests. A detailed statement, showing areas, contents of forests, &c., will be found in Appendix A, prepared by Mr. Johnston, from which the following data have been extracted.

(1) *Area.*—Equal 96,522 acres, equal to 151 square miles.

(2) *Boundaries.*—See Appendix A.

(3) *Topographical description.*—The forests are situated on undulating ground drained by the Koel, its feeder the Aurunga, and numerous small rivulets

which join either the Koel or the Aurunga. The highest elevation is reached near Barasand, amounting to about 2,000 feet above the sea.

(4) *Soil.*—The underlying rock is gneiss, which appears on the surface on all the upper ranges and steep slopes. On the undulating ground the gneiss is covered by laterite formations, by ferruginous clay and loam.

(5) *Description of forests.*—There is lower mixed forest, sâl forest, and upper mixed forest.

The most characteristic trees of the lower mixed forest are—

Khair (*Acacia catechu*).	Asan (*Terminalia tomentosa*).
Paras (*Butea frondosa*).	Ber (*Zizyphus jujuba*).

In the sâl forest the portion of sâl is so great that all other species become comparatively unimportant. Of the latter the following are chiefly characteristic:—

Piar (*Buchanania latifolia*).	Belawa (*Semecarpus anacardium*).

The upper mixed forest contains the greatest number of species, of which the following are most characteristic:—

Salai (*Boswellia thurifera*).	Guler (*Ficus leucocarpa*).
Dhauta (*Anogeissus latifolia*).	Ginyan (*Odina Wodier*).
Gamhar (*Gmelina arborea*).	Kusum (*Schleichera trijuga*).
Then (*Diospyros melanoxylon*).	Galgal (*Cochlospermum gossypium*).
Kien (*Diospyros tomentosa*).	Bans (bamboo) (*Bambusa stricta*).
Garohan (*Soymida febrifuga*).	

The distribution of the forests may be described in the following manner. The lower mixed forest occupies the lower portion of the area up to an elevation of about 1,000 feet. The upper mixed forest appears always where rocks appear in large masses on the surface—that is to say, on the upper part of the ranges and on steep slopes. The sâl forest appears, generally speaking, between the two,—that is to say, it occupies the undulating ground down to where the lower mixed forest begins.

Bamboos are found chiefly in the lower mixed forest and in the upper mixed forest.

Of the thirty-seven reserved blocks, Mr. Johnston classifies blocks Nos. 24, 26, 36, and 37 as lower mixed forest, and the remaining thirty-three blocks as sâl forest. The areas would therefore stand as follows:—

	Acres.
Lower mixed forest	4,083
Sâl forest	92,439
Total ...	96,522

There is no doubt, however, that many of the sâl blocks contain patches of upper mixed forest. The lower mixed forests are specially valuable on account of the bamboos which they contain.

Almost all the forests have been greatly reduced in condition by reckless cutting for generations past, and it is only here and there that a tree of large dimensions is found, showing what the sâl will grow to if not cut down at an early age.

(6) *Timber depôts*, (7) *Timber markets*, (8) *Lines of export.*—The Koel, after draining the reserves, proceeds past Daltongunge to the Soane river, which in its turn falls into the Ganges not far from Arrah. Hence material derived from the reserves, besides satisfying local demands, can be transported to the Patna Commissionership, where all forest produce finds a ready sale.

The Koel can be used for floating from its junction with the Aurunga downwards, a point nine miles above Daltongunge. There is an obstruction near a place called Sigsigi, which it is believed could easily be removed. Above its junction with the Aurunga the Koel is obstructed by rocks and boulders, and so is the Aurunga. From the junction of the Koel and Aurunga to the nearest reserve is a distance of five miles, and to the furthest reserve 40 miles in a straight line.

(9) *Villages in the reserves.*—On reference to Appendix A, it will be observed that a number of villages are scattered over the reserves. With the sanction of Government, an attempt will be made to settle the people outside the reserves, the results of which will be recorded next year.

(10) *Rights of surrounding population.*—None.

(11) *A map* on a scale of 2 inches to the mile has been prepared.

(12) *Working plan.*—The following table shows the average contents per acre of the ninteen most important kinds of trees of all the reserves as calculated from the valuation surveys made by Mr. Johnston. (For details, *see* Appendix A.)

Names of Trees.	CONTENTS PER ACRE.												
	Between												Total.
	0 & 1	1 & 2	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	10 & 11	11 & 12	
	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	Cbts.	
Asan (*Terminalia tomentosa*) ...	6·91	1·05	0·30	0·186	0·05	0·03	0·0005	.....	.....	.....	.....	.....	8·4765
Gamhar (*Gmelina arborea*)	0·17	0·12	0·02	0·004	.....	...	.....	.....	.....	.....	.....	.....	0·314
Garso (*Albizzia lebbek*, or *procera*) ...	0·02	0·04	0·007	0·005	0·002	0·0001	.....	.....	.....	.....	.....	.....	0·0741
Ginyan (*Odina Wodier*)	0·56	0·19	0·06	0·04	0·006	0·008	0·001	.....	.....	.....	.....	.....	0·865
Jamun (*Eugenia jambolana*)	0·02	0·02	0·006	0·002	0·002	0·0001	0·002	.....	.....	.....	.....	.....	0·0521
Jamti (*Eugenia caryophyllifolia*)	0·45	0·36	0·22	0·07	0·01	0·001	.....	.....	.....	.....	.....	.....	1·111
Khahua (*Terminalia glabra*)	0·003	0·002	0·001	0·001	0·003	.....	.....	0·0001	.....	.....	.....	.....	0·0101
Karam (*Nauclea cordifolia*)	0·22	0·11	0·07	0·05	0·02	0·001	.....	.....	.....	.....	.....	.....	0·471
Khair (*Acacia catechu*)	12·33	0·24	0·06	0·02	0·003	.....	.....	.....	.....	.....	.....	.....	12·653
Kumbi (*Carega arborea*)	0·02	0·01	0·002	0·002	0·0003	.....	.....	.....	.....	.....	.....	.....	0·0343
Kusum (*Schleichera trijuga*)	0·31	0·16	0·09	0·05	0·03	0·001	.....	.....	.....	.....	.....	.....	0·641
Mahua (*Bassia latifolia*)	1·10	0·49	0·24	0·10	0·03	0·005	0·0001	0·001	.....	0·0001	.....	.....	1·9662
Paras (*Butea frondosa*)	1·07	0·15	0·05	0·01	0·001	.....	.....	.....	.....	.....	.....	.....	1·281
Persar (7)	0·69	0·58	0·24	0·17	0·06	0·009	0·0009	.....	.....	.....	.....	.....	1·7499
Sakwa (*Shorea robusta*)	35·02	1·22	0·46	0·19	0·07	0·09	0·002	0·0003	0·001	0·001	.....	.....	37·0543
Sida (*Lagerstræmia parviflora*)	4·92	0·21	0·03	0·004	.....	.....	.....	.....	.....	.....	.....	.....	5·164
Dhauta (*Anogeissus latifolia*)	10·17	1·60	0·30	0·07	0·004	.....	.....	.....	.....	.....	.....	.....	12·144
Then (*Diospyros tomentosa*)	5·10	0·58	0·07	0·02	0·0003	.....	.....	.....	.....	.....	.....	.....	5·7703
Sissu (*Dalbergia sissoo*)	0·20	0·04	0·005	0·006	.....	.....	.....	.....	.....	.....	.....	.....	0·251
Total ...	79·283	7·172	2·231	0·950	0·2916	0·1452	0·0065	0·0014	0·001	0·0011	.....	.....	90·0828

It will be observed that what the reserves require is rest, so that they may recover from past maltreatment. For a number of years to come, only what is urgently required will be cut, and in the meantime a small amount of revenue will be derived by the sale of bamboos, lac, the flower of the *Bassia latifolia*, from grazing, where it cannot be excluded from the reserves, and other minor forest produce.

SOONDERBUNS DIVISION.

27. The policy to be followed in the Sunderbuns has been explained in last year's report, and in accordance with it a block of forest situated in the Jessore district, comprising 885 square miles, had been gazetted as a reserve. By a notification dated 10th August 1875, published at page 1031 of the *Calcutta Gazette* of the 11th August 1875, a further block, situated also in the Jessore district, to the south of the original reserve, has been added, in order to have large rivers on the east and west and the sea on the south as the boundaries.

(1) *Area.*—This stands now as follows:—

Gazetted in 1874-75 ...	566,253 acres	=	885 square miles.
Ditto 1875-76 ...	201,165 „	=	314 „
Total ...	767,418		1,199 „

(2) *The boundaries* of the added block are as follows:—

North and East.—The boundary of the reserved forest, as published under the date of the 15th February 1875, in the *Calcutta Gazette* of the 17th February 1875.

West.—The Arpungassy, or Namood Sumoodur, or Barapunga river; then the Mollinchew river.

South.—The Bay of Bengal.

(3) *Topographical description, to* (11) *Map of the reserve.*—The same as recorded in paragraph 72 of the report for 1874-75.

(12) *The working plan* for the whole reserve is at the outset of a very simple nature. On the north, east, and west of the reserve a number of revenue stations have been established, at one of which any one wishing to remove forest material must apply for a pass. This he receives against payment of the fixed rates. Without such a pass nobody is allowed to cut in, and remove any forest produce from, the reserve.

The reserve has been divided into two blocks. In the part situated to the west of the Pussur river, called the *Khoolna* block, and comprising an area of about 700 square miles, no restrictions regarding the size of the trees to be cut are enforced; but in the part situated to the east of the Pussur, called the *Baghirhat* block, and comprising an area of about 500 square miles, no sunder trees of less than three feet nine inches = to 2½ cubits girth, at four feet six inches (three hâts) from the ground, are allowed to be cut, unless dry or fallen. In this way a permanent supply of sunder timber will be secured, whereas on the other hand a large area is open to firewood-cutters without any restriction as to the size of the trees.

28. The area of unleased forests in the Soonderbuns, reserved and unreserved, stands as follows:—

Districts.	In square miles.		
	Open forest.	Reserved forest.	Total area
24-Pergunnahs	1,723	...	1,723
Jessore	67	1,199	1,266
Backergunge	29	.....	29
Total ...	1,819	1,199	3,018

The unleased areas in Jessore and Backergunge outside the reserve are small, but there are large leased areas which have only a sprinkling of inhabitants now, and in many cases none at all; so that there is still an enormous area available for extension of cultivation; and, besides, there are 1,723 square miles available in the adjoining 24-Pergunnahs

CHITTAGONG DIVISION.

29. In 1874-75 the following reserves were gazetted:—

The Maiyani reserve	339	square miles.
„ Kurnafuli or Sitapahar plantation reserve ...	8	„
Total ...	347	„

To these the Matamahari reserve, equal to 223 square miles, has been added during the year, thus bringing the total area up to 570 square miles. No further areas are to be reserved for the present.

30. *The Matamahari reserve*, gazetted by a notification dated 19th June 1875, published at page 728 of the *Calcutta Gazette* of the 23rd June 1875.

(1) *Area.*—142,720 acres, equal to 223 square miles.

(2) *Boundaries, East.*—The watershed between the Matamahari river on one side and the Twine Choung and Sungu rivers on the other side.

South and West.—The watershed between the Matamahari river on one side and Arakan and the area drained by the Bagkhali river on the other side.

North.—A demarcated line running from Alaikhwadong east and west to the eastern and western boundaries.

(3) *Topographical description.*—The reserve comprises the area drained by the Matamahari river above Alaikhwadong, a strip of land 32 miles long and from 2 to 10 miles broad. The eastern, southern, and western boundaries are watersheds, rising up to 2,500 feet in the highest part, and sending numerous spurs up to the banks of the Matamahari, which traverses about the centre of the valley. The area consists, therefore, of hilly and undulating ground, with very little level ground near water-courses.

(4) *Soil.*—The rock is chiefly sandstone of a soft permeable description, and the soil is generally sandy loam on the hilly and undulating ground, and often clay and sand near the banks of the water-courses.

(5) *Description of forest.*—The forest is "hill or bamboo forest" on the hilly and undulating ground, and "evergreen plain forest and savannah" on the low ground near water-courses, as described in paragraphs 48, 52, 53, and 54 of the annual report for 1874-75.

(6) *Timber depôts*, (7) *Timber markets*, (8) *Lines of export.*—The forest material is taken down the Matamahari to the Chittagong regulation district, and it can be transported by water to the area drained by the Sungu and the Matamahari rivers, and also to the country around Cox's Bazar.

(9) *Villages within the reserve.*—There are four villages in the reserve, the inhabitants of which carry on joom cultivation. Under the sanction of Government they will be provided with land elsewhere, and compensation has been paid to them. They are to leave the reserve within two years from the date of the notification in the Gazette.

(10) *Rights of surrounding population.*—None.

(11) *A map* on a scale of 4 miles to 1 inch is available.

(12) *Working plan.*—Jooming and the cutting of dug-outs are strictly prohibited. A detailed working plan cannot be prepared until the reserve has been further examined.

SINGBHOOM DIVISION.

31. In the district of Singbhoom, Chota Nagpore Commissionership, there is a Government estate called Saranda, situated between the Brahminee and Byturnee rivers, and comprising an area of about 450 square miles. This estate is known to consist chiefly of sâl forest, and owing to its out-of-the-way position it has not been much worked. According to reports there are still several hundred thousands of trees of six feet girth and upwards on the ground. By a notification dated 10th August 1875, published at page 1031 of the *Calcutta Gazette* of the 11th August 1875, this estate has been declared a Government reserved forest. The notification runs as follows:—

"The Lieutenant-Governor notifies that Saranda Pir, in the district of Singbhoom, Chota Nagpore Division, within the boundaries described hereafter, has, with the exception of the areas specially excluded below, been set aside as a reserved forest tract under the provisions of Act VII of 1865 and Part II of the forest rules of Lower Bengal of 1871, and has been placed in charge of the Conservator of Forests, Bengal:—

"*Boundaries* of Saranda Pir:—

"*North and East.*—The Karo river.

"*South.*—The political estates of Bonai and Keonjur.

"*West.*—The Koel river and political estates of Gangpore.

"Estimated area 450 square miles, equal to 288,000 acres.

"The following areas, being enclosures in the above tract, are excepted:—

"(1) A block of land estimated to comprise about 16 square miles, "situated on the east bank of the Koel, the property of Abiram "Toong.

"(2) About sixty-six villages or settlements, inhabited by 2,698 souls, "together with their cultivation, and any lands necessary to "provide for their agricultural and domestic requirements.

"These areas will be marked off by the Deputy Commissioner of the "district, who will be responsible for ensuring that a full and liberal allowance "of land is assigned to the villages or settlements according to the rule above "prescribed. He will also cause the areas of these settlements to be demarcated "during the next open season."

32. Out of the total area about 400 square miles may probably remain available for forest purposes. There is not much more known at present regarding this large reserve, except that timber can be taken from it by water to Cuttack. It is situated on a straight line drawn from Calcutta to Bombay, and if direct railway communication between those two places should be taken

in hand hereafter, the Saranda reserve would become enormously valuable. The Conservator hopes to visit Saranda during the ensuing cold season, so that a more detailed account of it will probably be recorded next year.

SECTION III.—PROTECTION AND IMPROVEMENT OF FORESTS.

ESTABLISHMENTS.

33. At the direction of Government, the Conservator submitted in April 1875 proposals for a reorganization of the superior and subordinate establishments. Regarding the former, comprising ten officers in all, no orders have been passed up to date. The proposals for subordinate establishments involved a monthly expenditure of Rs. 3,366. This amount was reduced by the Government of Bengal to Rs. 3,266 per mensem. The Government of India, on further consideration, decided not to sanction any permanent establishment until the organization of the department had been brought nearer to completion than it was at the time, but to allow in the meantime a monthly expenditure of Rs. 3,000. This sum has been distributed as follows :—

		Rs.
	Office Establishment.	
Conservator's office	... ...	367
Darjeeling Division	. ...	105
Julpigoree „	... ...	'80
Palamow „	... ...	52
Soonderbuns „	... ...	86
Chittágong „	... ...	110
	Total ...	800
	Forest Establishment.	
Darjeeling Division	... ...	436
Julpigoree „	... ...	396
Palamow „	... ...	198
Soonderbuns „	... ...	324
Chittagong „	... ...	846
	Total ...	2,200
	Grand total ...	3,000

Within these limits the Conservator has been authorized to entertain what establishment he considers necessary.

34. Since the above-mentioned proposals were submitted, the department has made great strides in advance. Large areas have been added to the reserves, for some of which no provision could be made at the time. During the next year or two further areas will be added; so that if the revenue increases as expected, a further decided increase in the superior and subordinate establishments will become necessary.

FOREST LAW.

35. No changes of any kind have taken place during the year. The special Act for Chittagong is still under consideration.

BREACH OF FOREST RULES.

36. The total number of prosecutions during the year amounts to 30, involving 73 persons. In 22 cases convictions were obtained against 41 persons, 1 case is pending, and 7 were dismissed. The details are as follows :—

37. DARJEELING DIVISION.

Number of prosecutions	13,	involving	15 persons.
„ of convictions	10,	„	12 „
„ of cases dismissed	3,	„	3 „

The cases referred all to theft of small timber and unlawful felling of trees; the punishments consisted of short terms of imprisonment.

38. JULPIGOREE DIVISION.

Number of prosecutions	3,	involving	26 persons.
„ of convictions	3,	„	8 „

The cases referred to illegal cutting of trees in the Buxar reserve, and the punishments consisted of small fines, or merely of the confiscation of tools.

39. SOONDERBUNS DIVISION.

Number of prosecutions ...	...	...	7, involving 22 persons.
„ of convictions ...	...	...	6, „ 18 „
„ of cases pending...	...	...	1, „ 4 „

The reserve in the Soonderbuns was taken under management during the year, and as the area had been open to all comers for some years past, many wood-cutters would not submit to the forest rules. However, the Conservator issued strict orders that defaulters should be leniently dealt with at the outset, and only in seven cases actual prosecutions were found necessary. The penalties inflicted consisted either merely of the revenue due to Government or of a small money fine in addition.

40. Operations were started on the 11th December 1874, and from that date up to 31st March 1876 the following boats entered the reserve for the purpose of removing forest produce without payment of the revenue due:—

11th to 31st December 1875	...	...	...	1,071 boats.
1st to 31st January 1876	...	...	...	872 „
1st to 29th February „	...	...	...	153 „
1st to 31st March „	...	...	...	22 „
		Total	...	2,118 „

The revenue due from these boats amounts to Rs. 11,550. Of this sum, Rs. 7,743 were paid up subsequently without the assistance of the district authorities. For the recovery of Rs. 2,077 the assistance of the district authorities was appealed to, and Rs. 977 were thus recovered. By prosecutions Rs. 30 were recovered: total recoveries Rs. 8,750; thus leaving a sum of Rs. 2,800 unrecovered. Considering that this result has been obtained without hardly any prosecutions, and that the number of defaulters decreased from 1,071 in December 1875 to 22 in March 1876, the Conservator is of opinion that great credit is due to Mr. A. L. Home, the Deputy Conservator of Forests, for the judicious manner in which he has managed the division. The greater part of the amount still due could not be recovered owing to many boatmen giving false names and addresses.

41. One official has been prosecuted by the Deputy Conservator on a charge of cheating, he having taken eight annas six pie in excess of the authorized amount of revenue due. The man has been fined Rs. 25 by the Magistrate. With this exception, the establishment has worked satisfactorily, a very close supervision having been exercised by the Deputy Conservator of Forests.

42. CHITTAGONG DIVISION.

Number of prosecutions	...	...	7, involving 10 persons.
„ of convictions	...	...	3, „ 3 „

In one case a man was sentenced to one year's rigorous imprisonment and a fine of Rs. 200 for counterfeiting a Government mark on a boat. Two revenue collectors and four watchers were tried for extortion, but the cases were dismissed by the Judge. On the other hand, a case against the party who laid the charge in one of these prosecutions, for bringing a false charge against a revenue collector, was pending at the close of the year.

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43. Though the number of prosecutions is small, there is no doubt that the protection of the forests has been greatly improved during the year, and this is due partly to a more adequate rate of pay of the subordinate establishment, and partly to better supervision by the officers of the department consequent on the increase in their number. Thus our agency for the prevention of breaches of the forest rules has been considerably improved.

DEMARCATION OF BOUNDARIES.

DARJEELING DIVISION.

44. In last year's report the Conservator pointed out that most of the boundaries in this division will have to be redemarcated. Up to the present the following boundaries have thus been done :—

(1) *The Teesta—Shukna Terai Range.*

(2) *The Shukna forest.*

(3) *The Bamunpokri forest,* except the north boundary.

(4) *The Dulka Jhar.*

The boundaries of these four forests, which have been actually demarcated with posts and pillars (exclusive of natural boundaries, or where other Government reserves adjoin them), extend over a length of about 24 miles, and their area amounts to 20,190 acres, equal to 31·5 square miles. Along these boundaries a path of from 6 to 15 feet broad, according to circumstances, will be kept open in future.

An effort will be made to complete the demarcation of the remaining reserves west of the Teesta during the year 1876-77.

JULPIGOREE DIVISION.

45. In 1874-75 a beginning was made by demarcating the greater portion of the southern boundary of the Buxa reserve, extending over a length of 7¼ miles.

During the year 1875-76 the following work has been done :—

(1) *The Buxa reserve.*—A further length of 15 miles has been demarcated, leaving a length of about 12 miles still to be done.

(2) *The Borojhar* proposed reserve has been completely demarcated. The length of line on which posts have been erected is 13 miles.

(3) *The Raidak* proposed reserve has been demarcated entirely. Length of demarcated line 10 miles.

(4) *The Bholka* proposed reserve has been completed. Length of demarcated line 8 miles.

Thus altogether a length of 46 miles has been demarcated with boundary posts at an average distance of 500 feet apart. The posts consist of sâl; they are put three feet deep into the ground, and from 12 to 15 feet above the level of the country, with a mound of earth or stones heaped up around each.

PALAMOW DIVISION.

46. The reserves in this division were demarcated with posts some years ago on the occasion of the Palamow settlement. In many places these posts have, however, disappeared; a commencement was made during the year to repair the boundary marks and to clear a path along the boundary lines. The work will be continued, and if possible completed, during the year 1876-77.

SOONDERBUNS DIVISION.

47. The boundaries of the Soonderbuns reserve are formed by the sea on the south and by rivers on the east, north, and west. To distinguish the reserved from the unreserved lands, 66 sign-boards, painted white, have been put up on the upper third of the western, on the northern and eastern boundaries—that is to say, from the junction of the Cobaduck and Shakbaria rivers northwards along the western, northern, and eastern boundary down to the sea. The boards have been nailed to conspicuous trees at and near the mouths of all navigable channels by which the reserve can be entered. The remainder of the western boundary has not been demarcated as yet, because proposals will soon be laid before Government to enlarge the reserve somewhat on that side with the view of facilitating protection.

CHITTAGONG DIVISION

48. There are three reserves in this division :—

The Maiyani reserve	...	...	...	339 square miles
The Sitapahar	...	...	...	8 „
The Matamahari	...	...	...	223 „

and the following demarcation work has been done during the year.

49. The *Maiyani* reserve comprises the area drained by the Maiyani. The northern, eastern, and western boundaries consist of watersheds which cannot be mistaken, and hence the southern boundary has been taken in hand first. From the junction of the Maiyani with the Kasalong, two lines, one running in a westerly direction to the western boundary, and another running nearly in a northerly direction to the eastern boundary, have been demarcated. These two lines, joining the watershed on the west with the watershed on the east, extend over a length of 3½ miles. They have been cleared to a breadth of 9 feet, and fixed by posts placed so that from one the next can be seen. The posts are 11 feet long, of which 3 feet are under ground. Every fifth post has a square 6 inches by 6 inches cut out of the bark and sapwood at a height of about 4 feet 6 inches from the ground, and a figure indicating its position branded on it on the side towards the reserve. The number runs from the mouth of the Maiyani to both sides. There are 107 posts on the western and 49 posts on the eastern line; total 156 posts, at an average distance of 112 feet from each other.

50. *The Sitapahar* reserve is situated on the banks of the Kurnafuli. The boundary, except where it is formed by the river, extends over a length of about 10 miles. Along this a path 9 feet broad has been cleared, and the boundary demarcated with wooden posts, in the same way as described in the case of the Maiyani reserve.

51. *The Matamahari* reserve comprises the area drained by the river of the same name above Alai Kwadong. The western, southern, and eastern boundaries are formed by watersheds. On the north the boundary is formed by a demarcated line running west and east from Alai Kwadong. During the year under review the western part of this line was cut, cleared, and demarcated in the same way as described in the case of the Maiyani reserve. The direction of the line from Alai Kwadong is nearly west, and it ends on the summit of Mraing Toung, thus extending over about 5 miles; it has been demarcated with 127 posts, which stand at an average distance of about 200 feet from each other. The line running east from Alai Kwadong could not be completed owing to the lateness of the season. It will be demarcated in 1876-77.

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52. So far the demarcation work. In connection with it a large amount of boundary surveying has been done, with the view of preparing maps and detailed descriptions of the boundaries, by means of which any part of it can be relaid hereafter should it become obliterated. As this work in most instances has not been completed during the year, the Conservator reserves the record of it for next year's report.

FIRE SUPPRESSION.

53. Until the reserves have been constituted, demarcated, and preliminary working plans prepared, the staff of this department will have little time to bestow upon fire suppression, which undertaking requires the utmost care and attention to make it a success. Nevertheless small experiments have been commenced with the view of finding out how to proceed when operations on a large scale will be started. For two years past we have been fairly successful in these experiments. In ordinary years rain falls in Darjeeling and Julpigoree in spring, and with a fair amount of care it will be practicable to keep fires out of the forests. Not so, however, in years with a specially dry spring, like that under review. No rain fell from October to May, and in consequence we have utterly failed to keep fires out of the experimental areas, the Sivok and Muraghat sâl forests, comprising 1,554 and 10,920 acres respectively.

54. The success achieved in keeping fires out of natural forests differs greatly in different parts of India, owing to the fact that the difficulties vary much. In the Punjab, for instance, no special measures at all are necessary, because jungle fires are not the rule, but the rare exception. In the hills of

the North-Western Provinces the difficulties are light. In Berar and the Central Provinces they are heavier, and considerable care and attention are necessary to be successful; but the difficulties become really formidable in the sub-Himalayan forests of Bengal and Assam outside the evergreen forests, when there is no rain in spring. Here the grass grows to such a height, and it is so densely packed, that it is almost impossible to protect a forest in a specially dry year and under a strong wind. The following instance will illustrate this. In March last Mr. Gamble, the officer in charge of the Darjeeling Division, was watching a fire near the Bamunpokri plantation, when he saw a burning leaf being carried through the air and deposited at a distance of about 100 yards from him, inside the plantation, and near an old nursery. He ran at once, in company with a servant, towards the spot, to reach which took him nearly two minutes, having to cross a small nulla on the way. When he arrived a cooly was already busy beating out the conflagration, which had sprung up the moment the burning leaf dropped. In spite of Mr. Gamble and his two companions' exertions, they could not master the fire, and the old nursery was burnt. In this instance three men could not prevent the spreading of a conflagration which commenced under their very eyes, and it may easily be understood that under such like conditions the watching of the protected tracts is almost out of the question, unless indeed the watchers are stationed only a few paces from each other.

55. Along the southern boundary of the Sivok forest, about two miles in length, a fire line 50 feet broad had been cleared, and extra men were employed to patrol it, the men living in huts on the spot. Adjoining the Sivok sâl forest is the Baikuntpore forest, which is burnt over annually. The spring of 1876 being unusually dry the forest fires in the Baikuntpore forest reached such a vehemence that they swept over our fire line with the greatest ease, and burnt the Sivok sâl forest.

Of the Muraghat sâl forest, all the parts containing tall grass without trees were burnt.

56. Though the results of the past year were totally unsatisfactory, the Conservator is of opinion that the experiment should be repeated by clearing or burning considerably broader fire-lines around the above-mentioned two forests The expenditure thus likely to be incurred will not be large, as the experimental areas are of limited extent.

The areas protected successfully were the plantations at Bamunpokri, in Darjeeling, and at Sitapahar, in Chittagong, with the exception of an old nursery at the former place, which was burned over. The young trees in the latter, about five years' old, have not been seriously injured, as the grass was not very tall; they have, however, in consequence of the firing, thrown out a large number of side branches.

CREEPER CUTTING.

57. In the Darjeeling and Julpigoree divisions creeper cutting has been commenced in a systematic manner.

DARJEELING DIVISION.

58. Operations were started in 1874-75 by cutting the creepers in the greater portion of the Sivok sâl forest, area 1,554 acres. During the year 1875-76 this forest has been completed, and in addition the following areas have been cleared of creepers:—

			Acres
The Shummur Danga sâl forest, area	..	...	522
The Gulma Gorumara „ „ „	.	...	195
	Total	...	717
	Grand total up to date	...	2,271

The expenditure amounted—

	Rs.	A.	P.
In 1874-75	103	8	0
„ 1875-76	93	13	6
Total ...	197	5	6,

or 1 anna 5 pie per acre.

In 1876-77 the Champasari and Mohurgong sâl forests will be taken in hand.

JULPIGOREE DIVISION.

59. In 1874-75 a commencement was made by cutting the creepers in compartment 6, block III, Buxa reserve; in 1875-76 compartments 1, 2, 3, and 4, were cleared. The areas and expenditure stand as follows:—

	Acres.	Rs.	A.	P.
Compartment 1	779	62	15	3
Ditto 2	305	16	3	3
Ditto 3	966	71	7	3
Ditto 4	649	61	1	6
Ditto 6	483	18	1	0
Total area ...	3,182	229	12	3,

or 1 anna 2 pie per acre.

60. Creeper cutting, if done systematically by marching gangs of coolies in lines through the forest, is very cheap, and it does a great amount of good. The Conservator hopes to start similar operations in Palamow and Chittagong during the year 1876-77.

ROADS.

DARJEELING DIVISION.

61. The following road works have been done during the year:—

(1) Two new traces, one about four miles and the other about three miles long, have been cut in the Dulka Jhar, with the view of dividing this forest into a number of compartments. The two old traces have been cleared, and a fair-weather road along the boundary has been commenced.

(2) A fair-weather timber road around the Lohagurhi hill; length, about two miles.

(3) A bridle-path from the Koklong river to the cart-road; length, nearly two miles.

(4) A fair-weather road running from the cart-road to the Mahanuddi along the boundary of the reserves; length, about three miles.

(5) A new timber road through the Rungdong forest; length, three miles.

(6) Ditto ditto through the Gulma forest; one mile.

(7) Ditto ditto through the Goramara forest; one mile.

(8) A bridle-path from the place where the Mahanuddi leaves the hills up to the Latpanchor ridge, and on to the junction of the Raing and Teesta rivers, has been commenced during the year, and about ten miles have been completed.

(9) A bridle-path frum Peshok to the Teesta; length, about two miles.

(10) A bridle-path from Peshok to the Rangit; length, about one and a half miles.

(11) The Shukna-Sivok timber road has been repaired.

JULPIGOREE DIVISION.

62. In last year's report it has been stated that a system of roads running parallel with each other, at a mile apart, from east to west, has been commenced in the Buxa reserve. In 1874-75 the 29th, 28th, and 27th mile-roads (on the Cooch Behar—Buxa military road), measuring about 8¾ miles in length, were laid out. During the year 1875-76 these three

roads have been considerably improved, thus rendering them fit for the carting of heavy timber. In addition, the 26th mile road, 3¾ miles in length, and the 25th mile road, 3¾ miles in length—total 7½ miles in length—have been laid out, but the latter has not been quite finished during the year. The work will be proceeded with in 1876-77.

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63. No roads have been constructed in the Palamow, Soonderbuns, and Chittagong divisions. The forests in the former are for the present sufficiently accessible by roads, and in the latter two divisions any forest can be reached by water. In Chittagong some roads through the reserves will have to be laid out when the demarcation has been completed.

BUILDINGS.

64. Most of the forest reserves in Bengal are in unhealthy localities, and the rainfall in the province is heavy. Hence it is absolutely necessary to provide rest-houses near the reserves at convenient intervals, or else the officers of the department cannot be expected to visit many of the forests during the rains, and to see that the subordinates attend to their duties.

The following rest-houses and other buildings have been erected during the year:—

65. DARJEELING DIVISION.

(1) A first class rest-house has been erected at Bamunpokri for the officer in charge of the plantation works at that place; cost, Rs. 1,000.

(2) A second class rest-house at Peshok, from which the forests on the Teesta and Rangit can be visited; cost, Rs. 100.

(3) A shed for four elephants has been built at Shukna; cost, Rs. 348.

(4) The repairs of the Sivok first class rest-house have been completed during the year.

66. JULPIGOREE DIVISION.

(1) A second class rest-house has been erected at Borojhar; cost, Rs. 55.

(2) A second class rest-house at Ramshai Hât; cost, Rs. 173.

(3) A shed for five elephants has been built at Rajabatkaua; cost, Rs. 400.

(4) A first class rest-house has been commenced at Buxa for the accommodation of the officer in charge of the Buxa range; estimated cost, Rs. 1,000.

SOONDERBUNS DIVISION.

67. At each of the revenue stations a small house, built in native style, has been erected for the accommodation of the station establishment.

CHITTAGONG DIVISION.

68. A small house for the ranger in charge of the Maiyani reserve has been erected at the junction of the Maiyani and Kasalong rivers.

SECTION IV.—PLANTATIONS.

69. At the beginning of the year under review 427 acres were planted out. To this area 63 acres have been added during the year, bringing the total area at the end of 1875-76 up to 490 acres. These are stocked in the following manner:—

		Acres.
Plantations of oaks, chestnuts, magnolias, and walnuts	...	144
Ditto conifers	...	42
Ditto Spanish chestnuts	...	1
Ditto teak	...	149
Ditto teak and toon	...	153
Ditto bamboos	...	1
Total	...	490

DARJEELING DIVISION.

70. *Rangbul plantation.*—Area, equal to 144 acres In last year's report it was stated that the plantation had been fenced in and divided by bridle-paths into four compartments. The effect of the fencing in has been highly beneficial, a great improvement in the growth of the young trees being already visible.

71. Compartments 1 and 2, equal to 52 acres, were cleared during the year, and 2,000 one-year-old walnut seedlings planted out in them. These are doing pretty well, but it is evident that it would have been better if they had been kept in the nursery for another year.

72. The greater part of the eighteen maunds of walnut, oak, magnolia, chestnut, and cryptomeria seed sown in the autumn of 1874 germinated well. The seedlings were pricked out in the nursery in August and September of 1875. The walnuts have done well, but owing to the early cessation of the rains and the excessively dry winter and spring many of the magnolia and oak seedlings have died. All the streams within reasonable distance dried up, so that the plants could not be sufficiently watered artificially to keep them alive. Care will be taken not to prick out again after the end of August.

73. In 1875-76 the following qualities of indigenous seed were sown :—

Walnuts	...	...	... 2 maunds.
Red magnolia	...	...	... 35 seers.
White „	...	...	... 38 „
Chestnuts	...	...	... 15 „

Neither acorns nor more chestnuts were available, these species not having set fruit. A number of different seeds were received through the kindness of the Conservator of Forests, North-Western Provinces, and the Deputy Conservator, Assam, so that now seedlings of the following species are growing in the nursery :—

Indigenous Trees.

Quercus lamellosa.	Michelia Cathcartu.
Ditto annulata.	Bucklandia populifolia.
Castanopsis tribuloides.	Pinus longifolia.
Magnolia Campbellu.	Juniperus recurva.
Michelia excelsa.	

Semi-indigenous Trees—seed collected in the District.

Cryptomeria Japonica.	Cupressus funebris.

From the North-Western Provinces.

Pinus excelsa.	Cupressus torulosa.
Cedrus Deodara.	Fraxinus floribunda.

From Assam.

Pinus Khasyana.

The walnuts have germinated splendidly, there being hardly two per cent. of vacancies in the rows. The magnolias also are coming up well. The *Bucklandia*, *Pinus longifolia*, and *Juniperus recurva*, have not come up well, but the remaining species have a healthy appearance.

74. The plantation was threatened by fire during April 1876, a most uncommon occurrence in the higher hills. If report is true, no jungle fire has been seen so high up (7,500 feet above the sea) for at least twenty years, and this shows what an exceptionally dry winter and spring there has been. The fire has been kept out of the plantation by a fire-path promptly cleared by the forester in charge.

75. *Dhobi Jhora plantation.*—Area, 42 acres. Nothing has been done during the year beyond protecting it.

76. *Bamunpokri plantation—Teak and Toon.*—The older parts of the plantation have been kept clear of jungle during the year. Compartments I 1*a*, I 1*b*, I 2*a*, I 2*b*, and I 3*a*, are now so far advanced that they will require only one clearing in 1876-77, and in the following year no clearing at all.

77. In addition to the 91 acres already existing, the following areas have been planted out with teak and toon :—

					Acres.
A strip of unplanted land adjoining compartments I 1 and I 3				...	5
Compartment I 2*c*	..	...	...	...	19
„ I 3*b* (partly)	...	...	...	...	8
			Total	...	32

According to the plan of operations, I 3*b*, equal to 14 acres, should have been completed. This was found impracticable, because the teak did not germinate well, and there were no more seedlings to plant out. The seedlings had a severe trial to go through owing to the continued drought in winter and spring, but on the whole they stood it better than might have been expected. In compartment I 2*c*, 75 per cent., and in I 3*b*, 50 per cent., of the seedlings survived. The vacancies have been filled up with sâl seed and seedlings.

78. The expenditure on the extension was estimated by the officer in charge of the division to come to Rs. 25, but the actual cost amounts to about Rs. 55.

79. During the spring of 1876 a new nursery extending over nearly two acres, and situated in compartment I 5, has been laid out. In this 4¾ maunds of teak, 2½ maunds of toon, and ½ a maund of sissu, were sown in March and April 1876, and by means of irrigation these seeds have been brought to germinate very well.

The following areas have been cleared during the year for extension :—

				Acres.
A strip along the south boundary	...	...	...	10
The rest of compartment I 3*b*	...	...	...	6
Compartment I 5 ...	...	...	...	32
		Total	...	48

80. The wood on these areas has been cut up into firewood and sold to a neighbouring tea-planter.

81. The system of planting has been changed in so far that only the teak seedlings are planted out during the first year, whereas the toon seedlings remain in the nursery until they are twelve months old. In consequence of this a double quantity of toon seed has been sown during the year. It is also intended to give the plantation an admixture of sissu and sâl.

82. The *Mahogany* plants have not done well during the year, and many have died: they had grown well the first two years, and then commenced to fall of.

83. An experimental *bamboo* plantation, extending over one acre, has been laid out during the year by the orders of Government. It is too early to speak of the result.

84. The *India-rubber* seedlings mentioned in last year's report have continued to do well. Several hundreds of them have been planted out in baskets and fixed in the upper parts of useless trees growing near water-courses. The rest of the seedlings are now being planted out in the ground in a moist place, so as to see which are doing best.

85. A new India-rubber nursery on a larger scale has been laid out at Sivok. The seedlings have come up fairly well. The seed sown in natural soil has germinated best, next that sown on charcoal, and least best that sown on broken bricks. The seedlings will be ready to be put out in the spring of 1877.

86. *Rangirum Spanish Chestnuts.*—This little plantation of one acre has done well during the year, no more young trees having died. The vacancies were filled up with the few seedlings raised from the seed received in the spring of 1875. The plantation is now being interplanted with hill toon.

A large quantity of seed has been received in the spring of 1876 and sown in a new nursery near the plantation. The seeds are reported to germinate fairly well.

SOONDERBUNS DIVISION.

87. Regarding a small baobab plantation ordered by Government to be made in the Soonderbuns, Mr. Home writes as follows:—

"I had received instructions to select a suitable compartment within the reserve on which to form an experimental plantation of baobab (*Adansonia digitata*) in the Soonderbuns, with a view to trying its adaptability to cover waste lands in the plains of Bengal at present treeless, and to determining whether it can be grown economically on a large scale.

88. "Though I have been over most parts of the reserve, I have not been able to find any land whatever conveniently situated for the purpose either as to labour or supervision within its boundaries; but having discovered a piece which, on reference to the Commissioner of the Soonderbuns, turns out to be available, I have, since the close of the official year, submitted an application to have 50 acres of this land close to one of the principal revenue stations, where labour and supervision will be at hand, made over to this department for the purpose.

89. "As, however, the undergrowth in the Soonderbuns is, I fancy, about the most vigorous in India, and as coolies, who will work in the forests all the year round at a properly constituted *para* or cutting place, where there is a fakeer to look after the tigers, can with difficulty be induced to land even to nail up boards on to the most conspicuous trees that overhang the rivers at Rs. 10 per month, I am not at all hopeful that the experiment can be carried out even with a fair amount of success or at what will be considered a moderate cost; and it appears to me that under such peculiarly adverse circumstances the result will not give a fair idea either of the adaptability of the tree to the plains of Bengal, or of the probable cost of growing it there.

90. "Dr. King has 200 seedlings available, the produce of all the seed he was able to collect last season, and has promised them to me, and as he informs me they should be planted out finally when they are a foot or 18 inches high, these 200 plants can be brought from the Botanical Gardens as soon as the piece of land required for the purpose is made over to this department."

CHITTAGONG DIVISION.

91. In this division two difficulties had to be contended with—the want of labour and the heavy rainfall during the year. Attempts were made to import eighty dhangar coolies, but the rates were so high that only towards the close of the year an agreement for the supply of the coolies at a reasonable rate could be entered into. Hence the Assistant Conservator had to rely throughout the year on the scanty amount of labour available locally. The average rainfall of Chittagong amounts to about 103 inches, whereas in 1875 it reached 129 inches. During a part of summer rain fell so continuously and in such quantities that many seedlings on the hill sides were literally washed out of the soil.

92. During the year under review the old plantations at Sitapahar, covering 141 acres and stocked with teak, were kept clear of grass, and an extension of 30 acres has been made. The latter area is planted out 5 feet by 5 feet, every fifth plant being toon, and the rest teak. The total number of seedlings planted out amounts to 51,840 of teak and 3,000 of toon.

93. The growth of teak continues to appear promising, and the damage done by borers has been less than in former years.

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94. The total expenditure on forest plantations in Bengal compared with the area stands as follows:—

Area planted ...	...	490 acres.
Total expenditure ...	...	37,998 rupees.
Expenditure per acre ...	...	77 „

The plantations made up to date, being of an experimental character, this high expenditure per acre may be justified; but unless it is considerably reduced on extending operations, it will probably be better to spend the money on assisting the natural reproduction of our forests. It is intended to start the latter branch of forest work in 1876-77 in the Buxa reserve in a systematic manner, and when the Bamunpokri block in Darjeeling has been planted up, measures will be taken in that division also to assist the natural reproduction of the forests in a more systematic manner.

SECTION V.—YIELD OF THE FORESTS.

95. The departmental timber operations of 1875-76, as compared with those of 1874-75, will be seen from the following table:—

Year	Brought to depôt during the year	Sold during the year
	C. ft.	C ft
1874-75	54,320	65,917
1875-76	77,296	55,900

The quantity of timber brought to depôt in 1875-76 is considerably larger than in 1874-75; on the other hand, the quantity sold is less. This is due to the working of the Buxa reserve, from which large quantities of timber have been brought to the depôt during the year, but not sold.

DARJEELING DIVISION.

96. During the year the following timber has been brought to depôt:—

	Pieces.	C. ft
Sâl logs	361	11,040
Sissu „	828	5,614
Toon „	65	585
Khair „	2	14
Total logs ...	1,256	17,253
Broad gauge sleepers	1,688	5,627
Narrow-gauge „	9,124	12,167
Total sleepers ...	10,812	17,794
Planks and scantlings	115	477
Sâl posts	28	153
Kala khambas	828	(?)
Grand total ...	13,039	35,677

Besides the above, 209 sâl logs and 507 kala khambas were boated from Sivok to Julpigoree.

The broad-gauge sleepers were old, but the narrow-gauge sleepers have been cut during the year.

97. The material, as detailed above, has been derived chiefly from old and from drift timber, and in addition the following green sâl trees have been cut during the year:—

From Lama Gumba forest	20 trees ...	Bamunpokri range.	
„ Kuklong	„ 29 „	Shukna range.	
„ Rungdong	„ 71 „		
„ Gulma hills	„ 50 „		
„ Sivok hills	„ 19 „		
Total ...	189 „		

Of these, 112 were taken to depôt in the log, 50 cut up into sleepers, and 27 have not yet been brought to the depôt. Only trees which cannot be brought to depôt in the log are cut up into sleepers.

98. Amongst the narrow-gauge sleepers are—

1095	of	Saj	*Terminalia tomentosa*
276	of	Chilauni	*Schima Wallichu.*
		Sida	*Lagerstrœmia parviflora.*
		Kumbi	*Careya arborea.*
		Khair	*Acacia catechu.*

These have been cut as an experiment, and they are to be tried on the Northern Bengal State Railway.

99. The following *sales* from Government depôts were effected during the year :—

	Pieces	C ft
Sâl logs	356	9,596
Sissu „	229	1,745
Other inferior logs	4	148
Total logs ...	589	11,489
Broad-gauge sleepers	4,815	16,050
Narrow „	12,616	16,821
Total sleepers ...	17,431	32,871
Scantlings	172	574
Kala khambas and posts	196	.. ...
Grand total ...	18,388	44,934

The sâl timber has been sold chiefly to the civil Public Works Department and to the Northern Bengal State Railway. The latter bought all the sleepers. The sissu timber has been sold in the local market to carpenters.

100. The financial results of the timber operations in the division are exhibited in the subjoined table :—

Description of timber	Average amount realized per cubic foot.	Total expenditure per cubic foot, including share of establishment, elephants (original purchase and feed and keep), tools, plant, timber roads, &c.	Net surplus per cubic foot.	Remarks.
	Rs. A P.	Rs A P.	Rs A. P	
Sâl logs ...	1 1 8	0 4 2	0 13 6	
Broad-gauge sâl sleepers	0 5 9	0 2 9	0 3 0	Including prices realized from rejected sleepers sold by public auction
Narrow „ „	1 3 6	0 14 9	0 4 9	
Average of all timber sold during the year ..	0 13 10	0 7 7	0 6 13	

The totals compare as follows with those of 1874-75 :—

	1874-75	1875-76
	Rs A. P	Rs A. P
Average receipts per cubic foot	0 11 0	0 13 10
„ expenditure per cubic foot	0 5 2	0 7 7
Surplus per cubic foot ...	0 5 10	0 6 13

The above figures show that it pays best to sell the timber in the log, as the price of narrow-gauge sleepers has been fixed at Re. 1-12 each. With regard to the broad-gauge sleepers, it should be noted that they are all old, having been cut years ago and left lying about the forests. The expenditure

of two annas nine pies represents the cost of collecting them and the carriage to the depôt. They must be sold for what they may fetch.

101. It has been mentioned above that only such trees which cannot be brought to depôt in the log are cut up into narrow-gauge sleepers for the Northern Bengal State Railway. Nevertheless the surplus per cubic foot is too low to make it worth while continuing the operation, and this the more so as it involves a wastage of timber of 40 per cent. as compared with timber in the log. Taking this into consideration, the department receives two annas ten pies for every cubic foot of round timber cut up into sleepers. If the price per sleeper were fixed at Rs. 2 each, it would bring up the rate per cubic foot of round timber to about five annas, in which case it would be worth while cutting the sleepers instead of disposing of the logs in the open market. The Conservator will make a representation on this subject to the Engineer-in-Chief, Northern Bengal State Railway.

102. In order to ascertain what it would cost to supply the Northern Bengal State Railway with fuel, 1,480 maunds were supplied by the department as an experiment. The expenditure for cutting and carrying to depôt amounted to Rs. 12-8 per 100 maunds; so that, adding a royalty of Rs. 3 per 100 maunds and a share of the cost of establishments, it will not be possible to supply large quantities under Rs. 16 per 100 maunds.

103. In the Bamunpokri plantation block 1,691 maunds of firewood were cut and stacked by the roadside at an average expenditure of Rs. 11 per 100 maunds.

104. The subjoined table exhibits the quantity of material removed from the forests *by private parties*:—

Description.		Number.	Amount realized or due.			Average amount of each.			Remarks.
			Rs	A	P.	Rs.	A.	P.	
(*Juglans regia*)	Akrot	6	150	0	0	25	0	0	
(*Michelia excelsa*)	Hill Champ	40	1,000	0	0	25	0	0	
(*Ditto champaca* and *sp.*) ...	Plains „	7	175	0	0	25	0	0	
(*Cedrela toona*) ...	Toon	12	295	0	0	24	12	0	
(*Dalbergia sissu*)	Sissu	2	24	0	0	12	0	0	
(*Quercus lamellosa*) .	Bûk	152	1,824	0	0	12	0	0	
(*Ditto annulata*)	Phalat	27	324	0	0	12	0	0	
(*Castanopsis sp. sp.*) ...	Katus	129	1,548	0	0	12	0	0	
(*Bucklandia populnea*) ...	Pipli	20	240	0	0	12	0	0	
(*Shorea robusta*)	Sâl	26	400	0	0	15	6	1	
(*Artocarpus chaplasha*) ...	Lutter -	2	20	0	0	10	0	0	
(*Echinocarpus Dasycarpus*)	Hill Chilanni	13	130	0	0	10	0	0	
(*Schima Wallichii*)	Plains „	58	580	0	0	10	0	0	
(*Terminalia tomentosa*) ...	Saj	26	260	0	0	10	0	0	
(*Ditto myriopteron*) .	Pani-saj	1	10	0	0	10	0	0	
(*Acrocarpus fraxinifolius*)..	Mandania	3	30	0	0	10	0	0	
(*Duabanga Sonneratoides* ...	Lampatia	113	1,130	0	0	10	0	0	
(*Canarium Bengalense*) ...	Goguldhup ...	25	250	0	0	10	0	0	
(*Phœbe lanceolata*)	Lali	37	296	0	0	8	0	0	
(*Machilus Odoratissimus*) ...	Kaula	8	16	0	0	8	0	0	
(*Bombax malabaricum*) ...	Semul	33	198	0	0	6	0	0	
(*Lagerstræmia parviflora*)...	Sida ..	2	12	0	0	6	0	0	
(*Dillenia pentagyna*) ...	Tatri	1	6	0	0	6	0	0	
(*Sterculia villosa*)	Udal	5	30	0	0	6	0	0	
(*Terminalia belerica*) . .	Bahura	4	24	0	0	6	0	0	
(*Nauclea cordifolia*) ...	Karam	7	42	0	0	6	0	0	
(*Actinodaphne sp.*) .	Lepchaphal	18	108	0	0	6	0	0	
(*Engelhardtia spicata*) ...	Mahua	3	18	0	0	6	0	0	
( ) ...	Tassing	33	198	0	0	6	0	0	
( ) ...	Gobria	33	198	0	0	6	0	0	
(*Symplocos sp.*)	Karain	4	24	0	0	6	0	0	
(*Acer Nepalense*)	Kabashi	21	126	0	0	6	0	0	
( )	Bhadras	8	48	0	0	6	0	0	
	Miscellaneous ...	10	60	0	0	6	0	0	
	Toon logs	4	45	0	0	11	4	0	
	Sâl kala khambas ..	129	319	0	0	2	7	7	
(*Dendrocalamus Hamiltonii*)	Bamboos	50,320	503	4	0	1	0	0	Per 100.
(*Schizostachyum sp.*) .	Malingo bamboos ...	Permits	427	0	0	..			
Confiscated.									
	Champ beams	3	12	0	0	4	0	0	
	Lampattia logs	2	21	0	0	10	8	0	
	Malingo bamboos ..	995	2	6	0	...	..		

Description.	Number.	Amount realised or due.	Average amount of each.	Remarks.
		Rs. A. P.	Rs. A. P.	
Drift.				
Toon	1	9 4 0	9 4 0	
Sissu	4	4 3 0	1 0 9	
Khair	2	1 15 0	0 15 6	
Lampattia	5	29 3 0	5 13 5	
Bahura	2	22 0 0	11 0 0	
Sâl dugouts	3	89 0 0	29 10 8	
	10,250	307 8 0	3 0 0	
Firewood.				
Monthly tickets, coolies	889	2,215 0 0	2 7 10	
Ditto carts	42	282 0 0	6 11 5	
Total ...		14,083 11 0		
Add—Balance due on amount of previous years ...		4 4 0		
		14,087 15 0		
Deduct—Amount due but not realized...		510 0 0		
Total amount of revenue shown under I-2 *a* & *b* & I-3 ...		13,577 15 0		

105. *India-rubber.*—The trees have been allowed rest throughout the division. The Conservator regrets having to record that many large trees have died in consequence of three years' tapping. There is no doubt that the *Ficus elastica* will stand not nearly so much tapping as has been supposed.

JULPIGOREE DIVISION.

106. The working of the Buxa reserve on Government account according to the working plan incorporated in the report for 1874-75 was commenced in the spring of 1875. It has been continued during the year, and in all other reserves only dry and fallen and a few green trees for local use have been sold. According to the working plan, compartments 1, 2, 3, 4, and 5, block III of the Buxa reserve, should have been cleared of all marketable sâl trees above 5 feet girth, and of all sissu trees above 4 feet 6 inches girth, measured at 4 feet 6 inches above the ground. By a mistake compartment 6 has been taken in hand instead of compartment 5. The following table shows the number of trees cut and the quantity of timber obtained from each compartment:—

Compartments.	Species of trees.	Number of trees felled.	Number of logs obtained.
Block III.—*Rajabatkana.*			
Compartment 1	Sâl	630	687
	Sissu	9	9
	Total	639	696
Ditto 2	Sâl	226	236
	Sissu	22	22
	Total	248	258
Ditto 3	Sâl	894	1,007
	Sissu	83	95
	Total	977	1,102
Ditto 4	Sâl	252	281
	Sissu	26	26
	Total	278	307
Ditto 6	Sâl	638	876
	Sissu	.....	.....
	Total	638	876
Total ... ... — Actuals	Sâl	2,640	3,087
	Sissu	140	152
	Total	2,780	3,239
Total ... ... — Estimate as per working plan ...	Sâl	5,823	.....
	Sissu	484	.....
	Total	6,307	.....

This table shows that of the 6,307 trees which appeared on the survey books, only 2,780 trees, or 44 per cent. of the total number, were found of sufficiently good quality to be removed in the log. *This is due chiefly to the effects of jungle fires*, especially when the trees are young. Then the seed for destruction is sown, and by the time the tree reaches maturity it is hollow and unfit for large timber. During the past year the survey of a line of railway running from the Northern Bengal State Railway to Assam has been commenced, and as soon as the construction of the line has been sanctioned all the old deceased trees will be felled and cut up into sleepers. Should the line not be constructed, attempts will be made to cut the trees up into scantlings, and to dispose of them in that shape. In addition to the trees and logs mentioned above, the following were cut during the year, partly to suit the requirements of the Government Telegraph Department and partly in road making :—

In compartment 8	3 sâl trees, giving	6 logs.
Between compartments 7, 8, 9 and 10, on the 26th mile road	16 sâl ditto	17 „
	3 sissu ditto	3 „
	1 khair tree, giving	1 log.
Total ...	19 sâl trees, giving	23 logs.
	3 sissu ditto	3 „
	1 khair tree, giving	1 log.
Grand total ...	23 trees, giving	27 logs.

107. Of the 3,266 logs cut, 1,378 were dragged by elephants to the carting roads during the year, and 1,348 carted to the Alipore depôt, situated at an average distance of 16 miles from the compartments.

108. The total quantity of timber brought to depôt during the year in division is exhibited below :—

	Pieces.	C. ft
Sâl logs	1,394	33,531
Sissu „	1	28
Other „	1	22
Total ...	1,396	33,581
Broad-gauge sâl sleepers (old) ...	228	759
Grand total ...	1,624	34,340

109. The timber *sales* effected during the year stand thus :—

	Pieces.	C. ft
Sâl logs	122	3,691
Broad-gauge sâl sleepers	828	2,759
Total ...	950	6,450

The timber has been sold chiefly to the Public Works Department, the Telegraph Department, and the Julpigoree District Engineer. The quantity sold is small as compared with that brought to depôt, and this is due to the fact that the greater portion of the timber removed from the Buxa reserve reached the depôt towards the close of the year only. In 1876-77, it is hoped the quantity sold will equal that brought to depôt.

110. The following figures exhibit the financial results of the timber operations :—

Description of Timber.	Average amount realized per cubic foot.			Total expenditure per cubic foot, including share of establishment, elephants (original purchase and feed and keep), tools, plant, timber roads, &c.			Net surplus per cubic foot.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Sâl logs	1	4	9	0	8	0	0	12	1
Broad-gauge sâl sleepers	0	10	5	0	5	6	0	4	11
Average of all timber sold during the year ...	1	0	3	0	6	11	0	9	4

Compared with the results of 1874-75, these figures show as follows:—

	1874-75.			1875-76.		
	Rs.	A.	P.	Rs.	A.	P.
Average receipts per cubic foot	0	12	6	1	0	3
Ditto expenditure ditto	0	7	6	0	6	11
Surplus per cubic foot ...	0	5	2	0	9	4

111. The description and quantity of material removed from the forest *by private parties* is exhibited below:—

	Number.	Amount realized.			Rate.		
I 2a.—*Timber and Bamboos.*		Rs.	A.	P.	Rs.	A.	P.
Sâl trees, green	51	510	0	0	10	0	0
Ditto, dry	10	50	0	0	5	0	0
Kala khambas, 3′ to 4½′ girth	157	471	0	0	3	0	0
Ditto, 2′ to 6′ girth	598	598	0	0	1	0	0
Ditto, under 2′ girth	1,114	557	0	0	0	8	0
Sissu, dry	5	15	0	0	3	0	0
Chilauni	28	84	0	0	3	3	2
Amri	2	12	0	0	6	0	0
Khair	1	2	4	0	2	4	0
Dugouts	3	36	0	0	12	0	0
Phool	1	6	0	0	6	0	0
Miscellaneous wood	2	2	0	0	.....		
Total ...	1,970	2,343	4	0	.....		
Add amount realized on account of former years ...	.....	75	0	0			
Total ..		2,418	4	0			
I 2b.—*Firewood.*							
Firewood	120 Mds.	3	4	0			
Ditto	2 Carts	0	8	0			
Total ...	.	3	12	0			
I 3—*Drift.*							
Sissu	80	116	0	0			
Semul	5	19	0	0			
Koeree	1	4	0	0			
Bolal	1	6	0	0			
Kadam	1	3	0	0			
Boeri	1	5	0	0			
Bonerbitchi	1	3	0	0			
Miscellaneous wood	12	16	0	0			
Total ...	103	172	0	0			
II 2.—*Minor Produce.*							
Tickets for collecting canes...	21	84	0	0	4	0	0
	21	84	0	0			

PALAMOW DIVISION.

112. The reserves in this division have enjoyed rest during the year, and the same policy will be followed for some time to come, so as to enable them to recover from past maltreatment. Only a limited quantity of minor produce has been removed from the forests, the exact amount of which cannot be given.

SOONDERBUNS DIVISION.

113. In order to ascertain whether the timber of Sunder (*Heritiera littoralis*) is suited for railway sleepers, 721 logs, containing 7,280 cubic feet, were purchased at 9 annas per cubic foot in April and May 1875, and stacked at Dumria depôt for trial on the Northern Bengal State Railway; it having been agreed that the actual expenses incurred should be repaid by the railway. The boating of these logs to Sara, the southern terminus of the Northern Bengal State Railway, was to be arranged for by this department, and 455 logs,

containing 4,516 cubic feet, were sent and delivered accordingly, on which the following expenses were incurred :—

	Rs.	A.	P.
Price of 455 logs, containing 4,517 cubic feet, at 9 annas per cubic foot	2,540	10	0
Boating ditto, including weighing 4,714 maunds 9 seers, at 15 per 100 maunds, from Dumria to Sara	714	8	5
Loading and unloading ditto	178	0	0
Establishments	248	4	7
Total ...	3,681	7	0

This gives the total expenditure per cubic foot of sunder timber delivered at Sara at Rs. 0-12-10.

114. It is understood that these logs gave an outturn of 2,405 narrow gauge sleepers (at 1·33 cubic feet each = 3,198·65 cubic feet of sunder timber, with a waste of 1,318 cubic feet, or 29 per cent.), which makes the cost per sleeper Re. 1-8-6 without the expenditure incurred on account of sawing. The remaining 266 logs have not yet been delivered to the railway.

115. In accordance with the system of management explained in section II of this report, seven revenue stations were established at the most convenient points, and as near the boundaries of the reserve as practicable. The names and situations of the stations will be seen from the subjoined table, the first-mentioned station being that nearest to the sea on the east boundary, and the last-mentioned that on the west boundary at present nearest the sea :—

No.	Name of station.	Where situated.	Date on which first permit was issued.
1	Lower Bhola	Junction of Bhola and Puneassia rivers	5th February 1876.
2	Upper „	Ditto of Khurma nuddee and Bhola river	20th December 1875.
3	Pussur	Ditto of Pussur river and Mangla nuddee	12th „ „
4	Bhuddur	Ditto of Bhuddur river and Sootur khal	16th January 1876.
5	Seepsah	Ditto of Seepsah river and Dhuki nuddee	11th December 1875.
6	Kayra	Ditto of Kayra and Shakbaria rivers	19th January 1876.
7	Cobaduck...	Ditto of Cobaduck and Arpungassya rivers	15th „ „

It will be observed that the stations were established between 11th December and 5th February 1876; so that the division was only for the two last months of the year under review in regular working order. In addition to the above stations, permits are also issued by the divisional office at Khoolna, and by the officer in charge of the division when on tour.

116. The divisional office issues the following permit form to the revenue stations :—

Forest Department, Bengal.

No. , Soonderbuns Division.
Permit No. of 187 -7 .
Name
Residence

Forest.	Date of expiry of grant.	Description of timber or other produce.	Number or quantity.	Rate.	Amount.	Remarks.
		Total				

The 187 . *Forester, Soonderbuns Division.*

These forms are printed with duplicate counterparts somewhat similar to cheques, and numbered consecutively throughout with printed numbers, bound in books of a hundred forms each. They are marked with the official divisional stamp, and a careful register is kept showing the numbers on the permit forms in each book as received from the printing office, the date and station to which books containing certain numbers are issued, and the date of receipts from the stations of the counterparts duly filled up, which are returned when all permits in the book have been issued by such station.

117. Each revenue station puts its own consecutive annual numbers on the permits it issues, and these, with all particulars of each permit, are entered daily in the "revenue register," a copy of which is forwarded on the 10th, 20th, and last day of each month to the divisional officer. The total number of boats and amount of revenue received daily for each description of produce are entered in the station cash-book, copies of which are submitted monthly. Concerning each permit-holder the following particulars are entered in the register,—viz. name, father's name, village and thana; and in future, in the remark columns of the permit and register, the district to which it is intended to take the forest produce for sale will also be entered, so that for the next annual report it will be possible to prepare a fairly approximate statement showing the final destination of the various descriptions of produce that may have been taken from the reserve during the official year.

118. On the back of the permit is noted the actual measurements of the boat on which the maundage is calculated, with the name of the station officer who has measured it; the main object of this being to know who is the officer responsible when, on checking the measurements (which is done, when opportunity offers, either within or outside the reserve) they are found to be incorrect. The boats are measured and the maundage calculated according to the directions contained in the Calcutta canal rules. On leaving the reserve the permit-holders show their permits at any revenue-station that may be on their road, when they are cancelled by the officer in charge by writing the word "cancelled," with the dates in red ink across them.

119. Each-station is visited as often as possible during the month by the divisional officer, when the entries in the daily revenue register, with the counterpart of the permits and the daily totals entered in the cash-book, are checked, the books initialled, and whatever revenue may have been collected since the last visit is taken over. The establishments are paid on the first inspection of the station in each month.

120. The forester in charge of each station keeps a note-book, in which it was intended should be entered such particulars regarding the names of fakeers in charge of paras, in what allotments the paras are situated, dates of commencing work in different parts of the reserve, and of abandoning or changing the position of paras, &c., reports concerning tigers, and such other useful or interesting information as they might be able to gather; but owing to the men being all new to the work, and the constant resignations of many of the foresters appointed during the first three months, who did not find the jungle life suited to their tastes, it has not been possible to make use of these notes to any extent. But it is hoped, as gradually the right sort of men are being employed on the work, that these note-books will be more useful in future.

A large number of the boatmen enter the reserve without knowing at all whereabout work is going on, and as they will not land in the forests except at a properly established para, they often waste a number of days drifting about the rivers in search of a fakeer; and these notes were ordered to be kept so that the foresters might be able to give the wood-cutters such information on this subject as they require.

121. The subjoined table shows the description and quantity of forest material removed from the reserve between the 11th December 1875 and the 31st March 1876, according to revenue stations :—

Revenue stations.	Produce.	Number of boats.	Number of maunds.	Amount realized and due.	Total per station.	Rate per 100 maunds.	Number of permits issued.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	
Station No 1, Lower Bhola river ...	Sundri timber	21	4,679	292 7 0		6 4 0	187 permits issued from 5th February 1876.
	Goran posts	169	41,463	647 13 9		1 9 0	
	Firewood	8	4,742	74 1 6		1 9 0	
	Golpatta	4	550	8 9 6	1,022 15 9	1 9 0	
Station No. 2, Upper Bhola river	Sundri timber	78½	15,276	954 12 0		6 4 0	284 permits issued from 20th December 1875.
	Goran posts	59	20,579	321 8 9		1 9 0	
	Firewood	85½	26,335	411 7 9		1 9 0	
	Golpatta	73	15,479	241 13 9		1 9 0	
	Shells	2	704	11 0 0		1 9 0	
	Canes	29	1,863	29 1 9	1,969 2 0	1 9 0	
Station No. 3, Pussur river	Sundri timber	144	29,314½	1,832 2 9		6 4 0	628 permits issued from 12th December 1875.
	Goran posts	2	362	5 10 6		1 9 0	
	Firewood	531	195,944	3,061 10 0		1 9 0	
	Nul	6	4,151	64 13 9		1 9 0	
	Golpatta	103	30,232	472 6 0		1 9 0	
	Shells	5	327	5 1 9	5,441 12 9	1 9 0	
Station No. 4, Bhuddur river	Sundri timber	7	700	43 12 0		6 4 0	928 permits issued from 16th January 1876.
	Firewood	658	147,636	2,306 13 0		1 9 0	
	Golpatta	337	69,258	1,082 2 6	3,432 11 6	1 9 0	
Station No. 5, Seepsah river ..	Sundri timber	9	1,546	96 10 0		6 4 0	1,070 permits issued from 11th December 1875.
	Firewood	710	151,081	2,360 10 3		1 9 0	
	Nul	5	489	7 10 3		1 9 0	
	Golpatta	224	52,264	816 10 0		1 9 0	
	Heutal	4	2,125	33 3 3	3,314 11 9	1 9 0	
Station No. 6, Kayra river	Sundri timber	3	504	31 8 0		6 4 0	347 permits issued from 19th January 1876.
	Firewood	146	33,601	525 0 3		1 9 0	
	Golpatta	199	40,648	635 2 0	1,191 10 3	1 9 0	
Station No. 7, Cobaduck river	Sundri timber	1	128	8 0 0		6 4 0	389 permits issued from 15th January 1876.
	Goran posts	13	6,525	101 15 3		1 9 0	
	Firewood	518	317,460	4,960 5 0		1 9 0	
	Golpatta	39	11,155	174 4 9	5,244 9 0	1 9 0	
Tour Office ..	Sundri timber	8	1,261	78 13 0		6 4 0	353 permits issued from 12th December 1875.
	Goran posts	5	2,251	35 2 9		1 9 0	
	Firewood	296	92,543	1,445 15 9		1 9 0	
	Nul	36	25,496	398 0 0		1 9 0	
	Golpatta	46	12,483	195 0 9	2,153 6 3	1 9 0	
Divisional Office	Sundri timber	58	6,954½	434 10 6		6 4 0	372 permits issued from 7th January 1876.
	Goran posts	20	3,205	50 1 3		1 9 0	
	Firewood	553	236,191	3,690 7 9	4,175 3 6	1 9 0	
Collected from defaulters through civil officers, criminal courts, and police ...	Sundri timber	39	10,508	656 10 0		6 4 0	
	Firewood	66½	24,835	388 0 9		1 9 0	
	Golpatta	1½	360	5 10 0		1 9 0	
	Shells	1½	420	6 9 0	1,056 13 9	1 9 0	
	Total .	5,321	1,643,626½	... ..	29,003 10 6		
	Deduct amount due not yet realized ..	.....	.....	.....	3 0 0		
	Total amount shown as revenue under I 2 *a* and *b* and II 2	.....	....	.....	29,000 10 6		

If arranged according to the districts to which the boats belong, the following table is obtained :—

Districts.	Sundri timber.			Goran post.			Firewood.			Minor produce.			Total per district.		
	Number of boats.	Number of maunds.	Amount.	Number of boats.	Number of maunds.	Amount.	Number of boats.	Number of maunds.	Amount.	Number of boats.	Number of maunds.	Amount.	Number of boats.	Number of maunds.	Amount.
			Rs. A. P.			Rs. A. P.			Rs. A. P.			Rs. A. P.			Rs. A. P.
Howrah ...		... ..	.....	...	.....	....	90	73,339	1,145 14 9	..	.	...	90	73,339	1,145 14 9
24-Pergunnahs ..	5	464	29 0 0	...	.....	.....	401	1,52,935	2,389 9 9	225	51,063	797 13 9	631	2,04,462	3,216 7 6
Calcutta ..	...	.	.....	11	4,481	70 0 3	105	67,431	1,053 9 9	1	396	6 3 0	117	72,308	1,129 13 0
Nuddea ...	...	...	..	...	.....	.....	.. ...	... ..	.....	2	918	14 5 6	2	918	14 5 6
Jessore ...	282	53,727½	3,357 15 9	72	16,650	260 2 6	2,913½	9,00,906	14,076 10 6	844½	1,85,975	2,905 13 9	4,112	11,57,258½	20,600 10 6
Rajshahye ..	2	626	39 2 0	...	.....	.....	1	256	4 0 0	4	5,694	88 15 6	7	6,576	132 1 6
Bogra ...	...	.	.....	...	.....	.....	.....	.....	. ....	3	1,749	27 5 3	3	1,749	27 5 3
Pubna .	4	528	33 0 0	10	1,956	30 9 0	5	2,275	35 8 9	17	15,916	248 11 0	36	20,675	347 12 9
Furreedpore ...	4	808	50 8 0	1	288	4 8 0	8	1,696	26 8 0	10	5,711	89 3 9	23	8,503	170 11 9
Backergunge ...	71½	14,715½	919 11 6	146	42,884	670 1 0	1½	285	4 6 9	6	582	9 1 6	225	58,464½	1,603 4 9
Chittagong ...	...	.....	.....	11	3,190	49 13 6	.....	.....	.....	...	.....	.....	11	3,190	49 13 6
Noakholly ...	...	.....	.....	16	4,408	68 14 0	.....	.....	.....	...	.....	.....	16	4,408	68 14 0
Tipperah ..	...	.....	.....	1	528	8 4 0	1	504	7 14 0	...	.....	.....	2	1,032	16 2 0
Chandernagore...	..	.....	.....	...	.....	.....	46	30,551	477 5 9	...	.....	.....	46	30,551	477 5 9
Total ...	368½	70,869½	4,429 5 3	268	74,385	1,162 4 3	3,571½	12,30,176	19,221 8 0	1,112½	2,68,004	4,187 9 0	5,321	16,43,434½	29,000 10 6

NOTE.—Date on which first permit was issued, 11th December 1875. Total number of permits issued, 4,528.

These figures show that hitherto chiefly the Jessore district has been affected by the constitution of the reserve, but doubtlessly a large portion of the quantity of material shown against this district has been exported to other districts. It is now proposed to add the Satkhira Soonderbuns, whence the Calcutta supply has been chiefly derived during the past year. In this manner the cutting will be pretty equally distributed over all the sunder-bearing tracts, and the destruction of the Satkhira Soonderbuns prevented, which latter would otherwise be affected in a comparatively short time.

CHITTAGONG DIVISION.

122. The yield of the forests during the year under review has been considerably smaller than that of 1874-75, and this is due chiefly to the following causes:—

(1) The year 1874-75 having been a bad shipping season both at Chittagong and at Akyab, the surplus labour proceeded to the forests and brought down a larger supply of material than found a ready market. The consequence of this was that less material has been brought down in 1875-76.

(2) Some of the best forests, on being gazetted as reserves, have been closed against timber cutting for the present.

(3) With the view of discouraging the manufacture of dugouts, the revenue due on them has been considerably raised.

123. The following statement exhibits the quantities of timber brought out during the last five years:—

Description of Timber.	Years.				
	1871-72.	1872-73.	1873-74	1874-75.	1875-76.
	Tons.	Tons.	Tons.	Tons.	Tons.
Timber in the log	443	1,056	610	1,130	1,032
„ boats	244	1,089	1,640	3,794	2,463
Beams and planks	841	19	509	1,110	177
Total ...	1,518	2,164	2,759	6,034	3,672

It will be observed that the yield, though smaller than that of 1874-75, is in excess of that of previous years. The falling off, as compared with last year, is chiefly in dugouts and sawn timber, whereas there is only a small falling off in timber in the log. This is precisely what is desired by the department, as not only in the manufacture of dugouts, but also in the rough way in which timber is sawn up in the forests, a great wastage takes place, whereas if the timber reaches the place of consumption in the log, every stick is made use of.

124. Of minor forest produce the following quantities have been removed during the year:—

Bamboos, orah	163,115
„ dolu	726,120
„ muli	17,754,291
Sun-grass, bundles	4,957,644
Canes	4,869,858
Gurjun-oil	816 mds.

SECTION VI.—FINANCIAL.

125. The financial results of the year, as compared with those of 1874-75, show as follows:—

	1874-75.	1875-76.	Increase.	Decrease.
	Rs.	Rs.	Rs.	Rs.
Receipts	1,85,914	1,98,274	12,360	.....
Expenditure	98,654	1,39,086	40,432	..
Surplus	87,260	59,188	. ...	28,072
Net result of the year's transactions	92,647	92,912	265	.....

126. The revenue of the year under review is Rs. 12,360 in excess of that of the previous year, but the actual collections were larger by Rs. 23,512; a sum of Rs. 11,151-15-3, due to the Rajah of Hill Tipperah on account of 1874-75, and paid to him in 1875-76, having been deducted from the revenue of the last-mentioned year.

127. Owing to the employment of a much larger superior and subordinate staff and the opening out of two new divisions the expenditure has increased by Rs. 40,432, thereby reducing the surplus by Rs. 28,072. On the other hand, the net result of 1875-76, in spite of the increase of expenditure, is a little in excess of that of 1874-75.

128. The good effect of the increased staff and of the extension of operations has already favourably influenced the receipts, but it will no doubt do so in a much higher degree during the next year or two.

129. The several divisions participate in the net result of the year's transactions in the following ratio, the expenditure on account of direction having been divided equally amongst the divisions:—

Net result of the year's transactions.

	Surplus.	Deficit
Darjeeling Division...	14,824	
Julpigoree „	6,233	
Palamow „	...	8,562
Soonderbuns „	14,863	
Chittagong „	65,100	
Civil officers „	453	
Total ...	92,912	

In 1874-75 three divisions—Julpigoree, Palamow, and Sunderbuns—worked with a deficit, and during the year under review only one—Palamow. The forests in the latter division have been overworked to a very large extent, and all that can be expected for some years to come is that the division will just pay its way.

130. It will be interesting to compare the financial results of the last five years, which stand as follows (exclusive of the territory now forming the Assam Chief Commissionership, and deducting two-fifths of the direction charges on account of Assam and Cachar, while they belonged to Bengal):—

Year.	Receipts.	Expenditure.	Surplus.
	Rs.	Rs.	Rs.*
1871-72	87,260	67,506	19,754
1872-73	1,16,690	62,554	54,136
1873-74	1,23,732	81,068	42,664
1874-75	1,85,914	98,654	87,260
1875-76	1,98,274	1,39,086	59,188
Increase during five years { In rupees	1,11,014	71,580	39,434
Increase during five years { In per cent.	127	106	200

These figures show that the receipts have increased in a greater ratio than the expenditure, and that in consequence the surplus has increased by 200 per cent. during the last five years.

131. It is difficult to say what the future financial results will be, but the Conservator may state that he thinks the surplus will rise to about Rs. 1,50,000 during the next two years, after which its increase will be slow, as many of the sub-Himalayan and all the forests in Chota Nagpore, Shahabad, and Sonthal Pergunnahs have been overworked formerly, and require rest for years to come.

132. The outstandings of the department rose from Rs. 8,008 to Rs. 12,383 during the year. Of this sum, Rs. 6,350 are in the hands of the officials of the department for current working expenses. Of the remaining Rs. 6,033, only Rs. 554 are new outstandings, whereas the balance of Rs. 5,479 is represented by old outstandings, which are irrecoverable. An application to write them off to profit and loss will be submitted in a separate communication.

SECTION VII.—GENERAL.

ELEPHANTS.

133. At the beginning of the year the department owned seven elephants, and during the year seven more were imported from Burmah at a total cost of about Rs. 10,000. These fourteen animals are distributed as follows:—

Darjeeling Division	4
Julpigoree „	7
Palamow „	1
Chittagong „	2
Total ...	14

Of the four elephants in the Darjeeling Division, three are used for timber works and one for travelling in the Terai. No more animals are required for the present in this division.

In Julpigoree two animals are set aside for the two officers of the division, and five are timber elephants. Of the latter, seven are required, five for the Buxa reserve and two for the Apalchand reserve.

One elephant for Palamow is sufficient for the present. None are required in the Soonderbuns, and two are all that are wanted for Chittagong for some time to come.

The Conservator has shifted hitherto as well as he could by taking an elephant either from the Julpigoree or Darjeeling Division. Two animals should now be provided for his use, and two more are wanted for the officers to be posted to the new reserves in Chota Nagpore:—

Total number now available	14
Ditto required	20
Number to be bought	6

Of the twenty elephants, ten are for travelling purposes and ten for timber works. It is intended to buy every year two additional animals until the full number has been made up.

CONSERVATOR'S TOUR.

134. The Conservator left on the 25th September 1875 for Simla, to attend the second general Indian forest conference held at that place, and he returned to head-quarters on the 20th October. On the 7th November he started on his inspection tour, and he returned finally to head-quarters on the 12th April 1876. During this time he visited almost every forest in the Darjeeling Division, and every reserve in the Julpigoree Division, selecting at the same time new reserves covering an area of about 280 square miles.

SERVICES OF OFFICERS.

135. The Conservator has much pleasure in recording that the officers of the department have worked satisfactorily during the year.

Mr. A. L. Home, Deputy Conservator, 2nd grade, was in charge of the Julpigoree Division from April to July 1875, and in charge of the Soonderbuns Division for the rest of the year. He deserves great credit for the energetic and judicious manner in which he started the administration in the last-mentioned division.

Mr. J. C. McDonell, Assistant Conservator, 1st grade, joined from the Punjab in January 1876 and assumed charge of the Julpigoree Division. The Conservator of Forests, Punjab, has expressed himself in favourable terms on Mr. McDonell's services in that province. During the last two and a half months of the year, when in charge of the Julpigoree Division, he accompanied the Conservator through his division, and made himself acquainted with the mode of working followed in it.

Mr. H. H. Davis, Assistant Conservator, 2nd grade, held charge of the Chittagong Division throughout the year. He discharged his duties in a satisfactory manner.

Mr. J. S. Gamble, M.A., Assistant Conservator, 2nd grade, was in charge of the Darjeeling Division during the year. He did full justice to his reputation as a superior and active officer.

Mr. W. Johnston, Assistant Conservator, 3rd grade, was in charge of the Palamow Division from April to December 1875, when he was attached to the Conservator's Office, and employed until the close of the year in examining the proposed reserves in the Shahabad district and in the Sonthal Pergunnahs, which work he executed to the entire satisfaction of the Conservator.

Mr. E. Fuchs, Assistant Conservator, 3rd grade, was attached to the Darjeeling Division from April to July 1875, in temporary charge of the Julpigoree Division from July 1875 until January 1876, and in charge of the Buxa Sub-division during the rest of the year. He worked hard and in a satisfactory manner on the demarcation of the reserves in the Buxa Sub-division in the latter part of the year.

Messrs. E. G. Chester, F. B. Manson, and F. H. Bonham Carter, Assistant Conservators, 3rd grade, joined the department, the former two in January and the latter in March 1876, having been sent out by Her Majesty's Secretary of State for India after a course of training on the continent of Europe.

Mr. G. A. Richardson, Sub-Assistant Conservator, was transferred to Bengal from the Central Provinces in December 1875, and he held charge of the Palamow Division until the end of the year. The Conservator is satisfied with the manner in which he has discharged his duties.

FORM No. 21.

FORM No. 21.

FOREST DEPARTMENT, BENGAL.

Annual Summary of Revenue and Expenditure for the year 1875-76.

CLASSIFICATION.	Direction.	Darjeeling Division.	Julpigoree Division.	Palamow Division.	Soonderbuns Division.	Chittagong Division.	Transactions on account of Dacca and Assam Divisions adjusted during the year.	Total.	Civil Officers.	Grand Total.
REVENUE.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
I.—Revenue from wood—										
1. Brought to depôt by departmental agency—										
a.—Timber and bamboos	.....	46,508 15 6	6,883 11 7	.....	3,681 7 0	.....	.....	57,074 2 1	.....	57,074 2 1
b.—Firewood and charcoal	.....	215 5 9	.....	.....	.....	.....	.....	215 5 9	.....	215 5 9
c.—Sandal-wood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. Wood removed from the forests by purchasers, license-holders, and permit-holders—										
a.—Timber and bamboos	.....	10,602 8 0	2,418 4 0	391 12 0	5,595 1 6	67,015 13 6	.....	86,023 7 0	125 0 0	86,148 7 0
b.—Firewood and charcoal	.....	2,804 8 0	3 12 0	1 2 0	19,221 8 0	.....	.....	22,030 14 0	.....	22,030 14 0
3. From confiscated drift and waif wood	.....	170 15 0	172 0 0	.....	.....	.....	.....	342 15 0	.....	342 15 0
II.—Revenue from minor produce—										
1. Grazing dues and sale of grass	.....	2,438 13 8	272 0 0	197 15 0	.....	.....	.....	2,908 12 8	.....	2,908 12 8
2. Other minor produce	.....	1,538 2 0	84 0 0	75 14 0	4,184 1 0	14,061 9 3	.....	19,943 10 3	.....	19,943 10 3
III.—Duty on produce of foreign or private forests imported into British territory—										
1. On wood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. On other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
IV.—Miscellaneous—										
1. From fines and forfeitures	.....	67 4 0	266 13 3	.....	19 11 0	.....	.....	353 11 3	.....	353 11 3
2. From refunds to the department	.....	0 5 2	.....	.....	.....	800 1 4	.....	800 6 6	.....	800 6 6
3. From other sources	10 0 0	1,947 3 5	73 6 1	352 10 9	20 0 0	5,724 0 0	.....	8,127 4 3	328 5 0	8,455 9 3
Total ...	10 0 0	66,294 0 6	10,173 13 11	1,019 5 9	32,721 12 6	87,601 8 1	.....	1,97,820 8 9	453 5 0	1,98,273 13 9
EXPENDITURE.										
A.—Conservancy and Works.										
I.—Cost of timber operations—										
1. On wood brought to depôt by departmental agency—										
a.—Timber	.....	12,824 2 9	11,586 3 10	.....	5,167 9 9	.....	.....	29,578 0 4	.....	29,578 0 4
b.—Firewood and charcoal	.....	406 3 3	.....	.....	.....	.....	.....	406 3 3	.....	406 3 3
c.—Sandal-wood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. On wood removed from the forests by purchasers, license-holders, and permit-holders—										
a.—Timber	.....	.....	.....	.....	.....	189 0 6	.....	189 0 6	.....	189 0 6
b.—Firewood and charcoal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. On confiscated drift and waif wood	.....	.....	1 0 0	.....	.....	.....	.....	1 0 0	.....	1 0 0
II.—Cost of collecting minor produce—										
1. Grazing and sale of grass	.....	.....	1 0 0	.....	.....	.....	.....	1 0 0	.....	1 0 0
2. Other forest produce	.....	53 4 0	.....	.....	.....	451 9 10	.....	504 13 10	.....	504 13 10

III.—Cost of forest organization—										
1. Demarcation lines and boundary pillars or marks ...	.....	157 15 9	1,076 11 0	.....	631 5 0	117 5 0	.....	1,983 4 0	.....	1,983 4 0
2. Working plans ...	.....	57 4 6	10 9 6	20 0 0	.....	.....	.....	87 14 0	.....	87 14 0
3. Surveys ...	213 10 0	5 8 0	.....	.....	.....	.....	.....	219 2 0	.....	219 2 0
IV.—Cost of the treatment and creation of forests—										
1. Natural forests—										
a.—Protection from fire ...	.....	272 15 6	135 12 0	.....	.....	.....	.....	408 11 6	.....	408 11 6
b.—Fencing and enclosing ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
c.—Improvement and conservation ...	.....	197 5 6	229 12 3	.....	.....	.....	.....	427 1 9	.....	427 1 9
d.—Reboisement or restoration of denuded areas ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. Artificial forests—										
a.—Formation ...	.....	3,473 1 8	.....	.....	.....	2,098 15 10	85 0 0	5,657 1 6	.....	5,657 1 6
b.—Protection from fire ...	.....	216 7 0	.....	.....	.....	.....	.....	216 7 0	.....	216 7 0
c.—Improvement and conservation ...	.....	1,062 11 0	12 8 0	.....	.....	.....	.....	1,075 3 0	.....	1,075 3 0
d.—Fencing and enclosing ...	.....	223 10 6	.....	.....	.....	.....	.....	223 10 6	.....	223 10 6
V.—Rent of leased forests—										
VI.—Cost of collecting duty on produce of foreign or private forests imported into British territory—										
VII.—Works of utility for the development of forests—										
1. Roads and bridges ...	.....	856 14 8	282 7 6	.....	.....	46 7 9	.....	1,185 13 11	.....	1,185 13 11
2. Buildings and offices ...	.....	1,193 0 1	2,585 1 11	.....	.....	134 11 8	.....	3,912 13 8	.....	3,912 13 8
3. Compensation for land taken up for forest purposes or for extinction of forest rights ...	.....	.....	.....	.....	.....	5,207 0 0	.....	5,207 0 0	.....	5,207 0 0
4. Other works ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
VIII.—Cost of departmental cattle—										
1. Purchase of stock ...	.....	2,900 0 0	3,728 0 0	1,100 0 0	.....	3,165 14 9	.....	10,893 14 9	.....	10,893 14 9
2. Hire of stock ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Feed and keep of cattle ...	.....	919 9 6	2,496 8 2	.....	.....	74 5 0	.....	3,490 6 8	.....	3,490 6 8
IX.—Cost of departmental plant and tools—										
1. For timber and wood operations ...	.....	162 2 6	136 6 0	.....	.....	15 0 0	.....	313 8 6	.....	313 8 6
2. For other purposes ...	.....	306 15 10	542 14 0	8 14 0	997 11 0	146 0 0	.....	2,002 6 10	.....	2,002 6 10
X.—Miscellaneous charges—										
1. Refunds ...	.....	10 0 0	.....	.....	.....	.....	.....	10 0 0	.....	10 0 0
2. Law charges ...	.....	0 12 0	.....	.....	.....	.....	.....	0 12 0	.....	0 12 0
3. Other " ...	.....	205 8 10	.....	5 14 0	46 5 3	2 4 9	.....	260 0 1	.....	260 0 1
Total of *A.—Conservancy and Works* ...	213 10 0	25,506 8 1	22,524 14 2	1,134 12 0	6,842 15 0	11,648 10 4	85 0 0	68,255 5 7	.....	68,256 5 7
B.—Establishments.										
I.—Salaries—										
1. Pay of Conservator ...	12,000 0 0	.....	.....	.....	.....	.....	.....	12,000 0 0	.....	12,000 0 0
2. Pay of control and executive officers ...	500 0 0	5,288 11 3	5,975 0 0	3,300 0 0	5,600 0 0	4,700 0 0	.....	25,363 11 3	.....	25,363 11 3
3. Protective establishment ...	.....	3,836 0 9	3,096 13 3	576 1 2	1,171 15 4	3,677 11 0	212 10 8	12,570 4 2	.....	12,570 4 2
4. Office establishment ...	4,575 3 6	1,015 10 1	764 7 2	93 14 5	505 14 8	973 8 0	7 4 0	7,934 13 8	.....	7,934 13 8
5. Deputation and special allowances ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
I.—Travelling allowances—										
1. Conservator ...	1,750 0 0	.....	.....	.....	.....	.....	.....	1,750 0 0	.....	1,750 0 0
2. Control and executive officers ...	.....	1,587 12 0	1,283 8 0	1,016 6 11	119 4 0	1,008 8 0	.....	5,009 4 11	.....	5,009 4 11
3. Protective establishment ...	.....	22 14 9	73 0 2	.....	.....	311 7 4	.....	407 6 3	.....	407 6 3
4. Office establishment ...	273 15 3	116 15 6	49 11 4	.....	58 3 3	86 3 4	.....	585 0 8	.....	585 0 8
III.—Contingencies—										
1. Stationery ...	.....	1 0 0	2 5 0	21 3 6	.....	.....	.....	24 8 6	.....	24 8 6
2. Carriage of tents and records ...	752 15 3	80 0 6	51 2 0	86 8 3	81 14 0	32 1 0	45 0 0	1,129 10 0	.....	1,129 10 0
3. Pay of police guards ...	.....	.....	.....	.....	124 6 2	.....	.....	124 6 2	.....	124 6 2
4. Sundries ...	884 3 2	393 15 6	214 3 3	223 3 8	1,517 3 11	191 12 10	73 14 5	3,498 8 9	.....	3,498 8 9
5. Official postage ...	179 0 6	99 5 6	77 10 0	11 8 0	56 7 0	19 7 0	.....	433 6 0	.....	433 6 0
Total of *B.—Establishments* ...	20,915 5 8	12,432 5 10	11,586 16 2	5,322 13 9	9,235 4 4	10,999 11 6	338 13 1	70,831 0 4	.....	70,831 0 4
Grand total of all expenditure ...	21,128 15 8	37,937 13 11	34,411 8 4	6,457 9 9	16,078 3 4	22,648 5 10	423 13 1	1,39,086 5 11	.....	1,39,086 5 11

Form No. 22.

FOREST DEPARTMENT, BENGAL.

Annual Abstract Account of the Cash Transactions of the Department during the year 1875-76.

Dr.

	Rs. A. P.	Rs. A. P.
To cash in hand on the 1st April 1875	502 2 3	502 2 3
„ Revenue received	1,98,273 13 9	1,98,273 13 9
„ Remittances from State treasuries	1,51,879 1 6	
„ Remittances from the Government Mathematical Instrument Department by transfer	721 11 0	
„ Remittance from the Government of the Central Provinces by transfer ...	413 0 0	
„ Remittances from the Indian Medical Department by transfer	56 8 4	1,53,070 4 10
„ Provincial Services, Medical	4 0 0	4 0 0
„ Advances recoverable ...	40,578 11 3	40,578 11 3
„ Recovery of advances made by the Accountant General, Bengal	166 10 8	166 10 8
„ Uncovenanted Service Family Pension Fund	1,360 14 0	1,360 14 0
Total		3,93,956 8 9

Cr.

	Rs. A. P.	Rs. A. P.
By expenditure of the Department—		
A ...	68,255 5 7	
B ...	70,831 0 4	1,39,086 5 11
„ Remittances to public treasuries	1,56,234 3 8	
„ Remittances to Department of Public Works by transfer	9,044 14 5	
„ Remittances to Northern Bengal State Railway by transfer	40,156 10 0	
„ Remittances to the Government Mathematical Instrument Department by transfer	10 0 0	
„ Remittances to the Government of the Central Provinces by transfer ...	413 0 0	
„ Remittances to the Government Telegraph Department by transfer ...	2,468 0 4	2,09,326 12 5
„ Provincial Services, Medical	4 0 0	4 0 0
„ Advances recoverable ...	44,953 12 1	44,953 12 1
„ Cash balance in hand on the 31st March 1876 ...	1,585 10 4	1,585 10 4
Total		3,93,956 8 9

Form No. 23.

FOREST DEPARTMENT, BENGAL.

Annual Statement of Outstandings and Liabilities of the Department on account of Contractors and Disbursers for 1875-76.

Divisions.	Department Debtor.			Department Creditor.			Balances due.	
	At commencement of the year.	Recoveries in cash, and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments during year.	At close of year.	To department (outstandings).	By department (liabilities).
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Direction	.....	342 8 0	342 8 0	262 8 0	80 0 0	342 8 0	.....	.....
Darjeeling Division... ...	.....	21,296 9 7	21,296 9 7	5,635 9 0	21,454 7 1	27,090 0 1	5,793 6 6	.....
Julpigoree „	.....	14,881 7 5	14,881 7 5	1,788 1 2	15,452 7 9	17,240 8 11	3,301 14 1	942 12 7
Palamow „	.....	.....	.....	130 2 0	0 8 0	130 10 0	130 10 0	.....
Soonderbuns „	.....	2,542 4 7	2,542 4 7	.....	2,875 7 6	2,875 7 6	333 2 11	.....
Chittagong „	.....	2,458 10 8	2,458 10 8	179 7 1	5,090 13 9	5,270 4 10	2,811 10 7	.....
Dacca „ (late) ...	.....	.....	.....	12 0 0	.....	12 0 0	12 0 0	.....
Total	.....	41,521 7 10*	41,521 7 10	8,007 11 3	44,953 12 1	52,961 7 4	12,382 12 1	942 12 7

	Rs. A. P.
* Recoveries in cash	40,578 11 3
Value of work done	942 12 7
Total ...	41,521 7 10

Form No. 24.

FOREST DEPARTMENT, BENGAL.

Statement of Timber brought to Depôt from the different Forest Divisions during the year 1875-76.

Name of River or Division.	Name of depôt.	Name of forest from which received.	Description of timber.	Pieces.	Cubic feet.	Total of each River or Division. Pieces.	Total of each River or Division. Cubic feet.
Darjeeling ...	Silligoree ...	Shukna ...	Kala khambas	289	.....		
		Lohagarhi ...	Sâl sleepers, narrow-gauge ...	2,566	3,422		
			Toons	30	.....		
	Sivok ...	Sivok plains ...	Sâl logs	34	530		
			Kala khambas...	509	.....		
		Sivok hills ...	Sâl logs	19	607		
		Teesta river ...	" logs	53	1,776		
			" sleepers, broad-gauge	14	47		
			Sissu logs	2	42		
		Reyang ...	Sâl "	124	4,023		
		Shukna ...	" "	81	2,702		
			" posts	24	143		
			" sleepers, broad-gauge	1,665	5,550		
			" sleepers, narrow-gauge ...	5,087	6,785		
			" scantlings	115	477		
			Sal sleepers, narrow-gauge... ...	1,095	1,460		
			Chilauni, sida, and kumbi sleepers, narrow-gauge	276	367		
	Shukna ...	Mahanadi ...	Sissu logs	136	977		
			Sâl "	12	365		
			Khair "	2	14		
			Khair sleepers, narrow-gauge ...	100	133		
		Rungdung ...	Sâl logs	6	130		
		Panchkila ...	Ditto	10	208		
		Panchnai ...	Ditto	10	270		
	Rakti ...	Lama Gumba ...	Ditto	12	369		
		Balasun river ...	Sissu logs, drift	690	4,595		
		Chonga ...	Sâl posts	4	10		
			Sâl sleepers, broad-gauge	9	30		
	Nuksarbari ...	Mechi river ...	Toon logs, drift	65	585	13,039	35,677
Julpigoree ...	Julpigoree ...	Teesta river ...	Sâl logs, drift	37	627		
			Sissu ditto	1	28		
			Sorol ditto	1	22		
		Leesh and Geesh ...	Sâl sleepers, broad-gauge	228	759		
	Alipore ...	Buxa ...	Sâl logs	1,348	32,425		
	Muraghat ...	Muraghat ...	Ditto	9	479	1,624	34,340
Soonderbuns ...	Dumria ...	Soonderbuns ...	Soondri logs	721	7,280	721	7,280
			Total ...	.....	.....	15,384	77,297

FORM No. 25.

FOREST DEPARTMENT, BENGAL.

Annual Account of Timber for 1875-76.

Particulars.	Timber. Logs.	Sleepers, broad-gauge.	Sleepers, narrow-gauge.	Planks and scantlings.	Kala khambas.	Pieces.	Total.
I.—Stock in hand in the following divisions at commencement of the year.							
Darjeeling Division	1,506	8,016	5,604	384	53	15,563	
Julpigoree „	396	651	.....	83	5	1,135	
	1,902	8,667	5,604	467	58	16,698	16,698
II.—Timber received at depôts from the forests.							
Darjeeling Division	1,256	1,688	9,124	115	856	13,039	
Julpigoree „	1,396	228	.....	.....	.....	1,624	
Soonderbuns „	721	.....	.....	.....	.....	721	
	3,373	1,916	9,124	115	856	15,384	15,384
III.—Timber received by transfer from other depôts.							
Darjeeling Division	209	.....	.....	.....	507	716	
Julpigoree „	62	.....	.....	.....	.....	62	
Total ...	271	.....	.....	.....	507	778	778
Grand total ...	5,546	10,583	14,728	582	1,421	32,860	32,860

Particulars.	Timber. Logs.	Sleepers, broad-gauge.	Sleepers, narrow-gauge.	Planks and scantlings.	Kala khambas.	Pieces.	Total.
I.—Timber removed by purchasers from depôts.							
Darjeeling Division	589	4,815	12,616	172	196	18,388	
Julpigoree „	122	828	.....	.....	.....	950	
Soonderbuns „	455	.....	.....	.....	.....	455	
	1,166	5,643	12,616	172	196	19,793	19,793
II.—Lost or used by department.							
Darjeeling Division	794	.....	.....	1	14	809	
Julpigoree „	.....	.....	.....	.....	1	1	
	794	.....	.....	1	15	810	810
IIa.—Transferred to other depôts.							
Darjeeling Division	209	.....	.....	.....	507	716	
Julpigoree „	62	.....	.....	.....	.....	62	
	271	.....	.....	.....	507	778	778
III.—Stock in hand at close of the year.							
Darjeeling Division							
Julpigoree „	1,379	4,889	2,112	326	699	9,405	
Soonderbuns „	1,670	51	.....	83	4	1,808	
	266	.....	.....	.....	.....	266	
Total ...	3,315	4,940	2,112	409	703	11,479	11,479
Grand total ...	5,546	10,583	14,728	582	1,421	32,860	32,860

Memorandum of timber lost or used by the Department.

Darjeeling Division.—789 miscellaneous old logs in the Rungbool depôt written off as useless. They were unsaleable.

Julpigoree Division.—
5 sâl logs, 140 cubic feet, lost from Julpigoree depôt.
1 kala khambas } 9 cubic feet, lost from Shukna depôt.
1 scantling }
13 kala khambas used for repairs to Julpigoree office bungalow.
1 kala khambas used for repairing wheels for Government cart.

810

Form No. 26.

FOREST DEPARTMENT, BENGAL.

Statement showing the Amount realized on account of the different classes of Timber sold during the year 1875-76.

Name of Division and Description of Timber.	Number of logs and pieces.	Cubical contents.	Amount realized and due on account of timber sales.	Average amount per log.	Average cubical contents per log.	Average amount per cubic foot.	Remarks.
Darjeeling Division.			Rs. A. P.	Rs. A. P.		Rs. A. P.	
Sál logs...	356	9,596	10,600 0 7	29 12 0	27	1 1 8	
Sissu „	229	1,745	619 8 0	2 11 3	7·6	0 5 8	
Other inferior logs	4	148	33 0 0	8 4 0	37	0 3 8	
Sál kala khambas and posts ...	196	.....	615 8 0	3 2 0	.....	.....	
Sleepers, sál, broad-gauge, 1st class	1,534	5,113	3,451 8 0	2 4 0	3·3	0 10 9	
„ „ „ „ 2nd „	932	3,107	1,631 0 0	1 12 0	3·3	0 8 5	
„ „ „ „ rejected	2,349	7,830	699 14 0	0 4 9	3·3	0 1 5	Old rejected sleepers sold by public auction.
„ „ narrow „	10,591	14,122	18,534 4 0	1 12 0	1·3	1 5 0	
„ „ „ „ rejected	1,000	1,334	280 0 0	0 4 5	1·3	0 3 4	
„ sáj „ „	720	960	1,260 0 0	1 12 0	1·3	1 5 0	
„ Chelauni, sida, kumbi and khair, narrow-guage ...	305	405	533 12 0	1 12 0	1·3	1 5 0	
Scantlings, sál	166	572	775 6 8	4 10 8	3·4	1 5 8	
„ champ	6	2	4 0 0	0 11 0	·3	2 0 0	
	18,388	44,934	39,038 1 3	2 1 11	2·4	0 13 10	
Julpigoree Division.							
Sál logs	122	3,691	4,787 1 9	39 3 9	30·2	1 4 9	
„ sleepers, broad-gauge, 1st class	729	2,430	1,640 4 0	2 4 0	3·3	0 10 9	
„ „ „ „ 2nd „	80	266	140 0 0	1 12 0	3·3	0 8 5	
„ „ „ „ rejected	19	63	15 7 0	0 13 0	3·3	0 3 11	
	950	6,450	6,582 12 9	6 14 10	6·7	1 0 3	
Sunderbuns Division.							
Sunder logs	455	5 16	3,681 7 0	8 1 5	9·92	0 13 0	
	455	4,516	3,681 7 0	8 1 5	9·92	0 13 0	
Total ...	19,793	55,900	49,302 5 0	2 7 10	2·8	0 14 1	

Add balance due on account of previous years	8,248 6 3	
Total ...	57,550 11 3	
Deduct amount realized and credited during the year	57,074 2 1	
Balance remaining unrealized	* 476 9 2	

	Rs. A. P.
* Balance remaining unrealized	776 8 0
Excess amount realized, being advance for logs to be taken over	300 14 10
Balance ...	476 9 2

Form No. 27.

FOREST DEPARTMENT, BENGAL.

Statement showing the Amount expended on account of Timber received from the different Forest Divisions during 1875-76.

Divisions.	Number of pieces.	Cubical contents.	Timber expenses.	Conservancy expenses, cost of establishment, &c., excluding direction.	Total amount expended, excluding direction.	Average amount paid per piece.	Average cubical contents per piece.	Average amount paid per cubic foot.	Remarks.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	
Darjeeling ...	13,039	35,677	12,896 2 9	4,299 0 0	17,195 2 9	1 5 1	2·7	0 7 8	Cost of cattle taken at two-thirtieths, feed and keep of cattle one-half, cost of tools and plant for timber works whole, other charges Rs. 224, and establishment charges one-fourth.
Julpigoree ...	1,624	34,340	13,120 0 8	7,391 0 0	20,511 0 8	12 10 0	21·1	0 9 6	Cost of cattle taken at three-fortieths, feed and keep of cattle two-thirds, tools and plant for timber works whole, other charges Rs. 700, and establishment charges one-third.
Sunderbuns	721	7,280	5,167 9 9	.....	5,167 9 9	7 2 8	10·09	0 11 4	All expenses incurred on account of those logs have been charged to Al 1a.
Total ...	15,384	77,297	31,183 13 2	11,690 0 0	42,873 13 2	2 12 7	5·0	0 8 10	
Deduct—Amount not paid during the year.			1,605 12 10						
Total amount shown under AIIa, form 21.			29,578 0 4						

Revised Form No. 28.

FOREST DEPARTMENT, BENGAL.

Annual Account of Revenue realized in the Forest Department, Bengal, during 1875-76.

Dr. | Cr.

RECEIPTS.	Rs.	A.	P.	DISBURSEMENTS.	Rs.	A.	P.
Amount of revenue realized in 1875-76	1,98,273	13	9	Amount disbursed in 1875-76	1,39,086	5	11
Deduct—				*Deduct—*			
Amount realized on account of previous periods	*8,197	13	6	Amount disbursed on account of transactions of previous periods...	1,007	9	1
Balance ...	1,90,076	0	3	Balance ...	1,38,078	12	10
Add—				*Add—*			
Outstandings on account of the year (Rs. 1,847 A. 2 P. 10)				Amount due for transactions during the year under review, but not yet disbursed... ...	1,947	5	8
Minus for bad debts	1,847	2	10				
Add—							
Amount deducted from revenue of the year ... ... †11,151 15 3							
Minus amount reducible from revenue of the year ... ... ‡9,466 6 11	1,685	8	4				
Value of the year's transactions ...	1,93,608	11	5	Real cost of the year's transactions ...	1,40,026	2	6

	Rs.	A.	P.
Value of the year's transactions	1,93,608	11	5
Cost ditto ditto	1,40,026	2	6
Balance ...	53,582	8	11
Add—			
Difference between the value of stock at commencement and close of the year	39,329	0	0
Net result of the year ...	92,911	8	11

* Rs. 757-14-0 outstandings on account of last year not yet collected.
† Rs. 11,151-15-3, share of Rajah of Hill Tipperah in the Fenny toll collections for 1874-75, paid during the year under review.
‡ Rs. 9,466-6-11, share of Rajah of Hill Tipperah in the Fenny toll collections for 1875-76, due.

Explanation of difference between the Value of Stock at commencement and close of the year 1875-76.

	Sale value of excess stock at close of the year.			Sum required to replace deficiency at close of the year.			Difference. In favour of the year.			Difference. Against the year.		
Darjeeling Division.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
823 logs = 7,220 cubic feet; 2,911 cubic feet, at Re. 1 per cubic foot, and 4,609 cubic feet at annas 8 per cubic foot	4,015	0	0	.....								
950 inferior logs, 36,891 cubic feet, at Rs. 2-7-10 per log	.....			2,367	8	0						
14 sál-sleepers, broad-gauge, at Re. 1-8 each	21	0	0	.....								
3,141 ditto ditto, 3,105 at Re. 1-8 and 36 at Re. 1-4 each ...	.....			4,702	8	0						
446 sleepers, narrow-gauge (rejected), at annas 4 each	111	8	0	.....								
3,938 ditto ditto at „ 15	.....			3,691	0	0						
646 kala khambas, 625 at Rs. 2-8 and 21 at Rs. 2 each	1,604	8	0	.....								
58 scantlings, 100 cubic feet, at Re. 1 per cubic foot	.....			100	0	0						
Other stock (elephants)	1,836	0	0	.....								
Total Darjeeling Division	8,488	0	0	10,861	0	0	.....			2,373	0	0
Julpigoree Division.												
1,327 logs = 31,566 cubic feet; 29,361 cubic feet at Re. 1; 50 cubic feet at annas 12, and 2,155 cubic feet at annas 8 per cubic foot ...	30,476	0	0	.....								
53 logs, 1,676 cubic feet, at annas 2 per cubic foot	.....			209	8	0						
1 kala khambas	.....			1	8	0						
600 sál sleepers, broad-gauge, at Re. 1-8 each	.....			900	0	0						
Other stock (elephant and a house)	6,455	0	0	.....								
Total Julpigoree Division	36,931	0	0	1,111	0	0	35,820	0	0	...		
Palamow Division.												
Other stock (elephant)	1,100	0	0	.....			1,100	0	0	...		
Soonderbuns Division.												
266 logs, 2,763 cubic feet, at annas 9 per cubic foot	1,554	6	0	.....								
Other stock (boats)	1,227	10	0	.....								
Total Sunderbuns Division	2,782	0	0	.....			2,782	0	0	.....		
Chittagong Division.												
Other stock (elephants)	2,000	0	0	.....			2,000	0	0	.....		
Total	... ..			.....			41 702	0	0	2,373	0	0

	Rs.
In favour of the year	41,702
Against the year	2,373
Net difference in favour of the year	39,329

FOREST DEPARTMENT, BENGAL.

Area of Reserved Forests in 1875-76.

Reserved Forests.		Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.	Total for each division.
Darjeeling Division ...	Hill Tracts	75	.....	.....	75	106
	Terai	31	.....	.....	31	
Julpigoree " ...	Muraghat sâl forest	17	.....	.....	17	159
	Dainah sissu "	2	.....	.....	2	
	Buxa plain "	110	.....	.....	110	
	Apalchand "	.....	30	.....	30	
Palamow " ...	Palamow "	.....	151	.....	151	151
Soonderbuns " ...	Soonderbuns "	885	314	.....	1,199	1,199
Chittagong " ...	Maiyani "	339	.....	.....	339	570
	Sitapahar plantation reserve ...	8	.....	.....	8	
	Matamahari forest	.....	223	.....	223	
Singbhoom " ...	Saranda "	.....	400	.....	400	400
	Total ...	1,467	1,118	.....	2,585	2,585

FOREST DEPARTMENT, BENGAL.

Area of Unreserved Forests in 1875-76.

Divisions.	Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.	Remarks.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	
Julpigoree Division ...	214	.....	30	184	These are the areas from which the department derives revenue. The area of the remaining unreserved forests is not known, but it is estimated to amount to some 50,000 square miles, the greater portion of it being private property.
Chittagong " ...	5,323	.....	223	5,100	
Total ...	5,537	.....	253	5,284	

FOREST DEPARTMENT, BENGAL.

Area of Plantations for the year 1875-76.

Name of Plantation.	Area in 1874-75.	Total cost to end of 1874-75.	Area added during 1875-76.	Amount expended during 1875-76.	Total area up to end of 1875-76.	Total expenditure incurred up to end of 1875-76.	Remarks.
Darjeeling Division.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	
Rungbool	144	10,184 10 3	.....	1,039 0 0	144	11,223 10 3	
Bamunpokri	91	13,917 11 10	32	3,643 4 8	123	17,561 0 6	
" India rubber	.....	.....	.....	14 6 0	.....	14 6 0	
" Bamboo...	.....	.....	1	31 11 6	1	31 11 6	
Dhobi Jhora	42	32 0 0	.....	.....	42	32 0 0	
Rangirum Spanish chestnut plantation.	1	103 8 0	.....	102 3 6	1	205 11 6	
Sivok India rubber nursery	.....	8 12 0	.....	119 8 6	.....	128 4 6	
Julpigoree Division.							
Fallacotta	3	204 4 11	.....	12 8 0	3	216 12 11	
Chittagong Division.							
Sitapahar	141	5,660 6 11	30	2,098 15 10	171	7,759 6 9	The Holingamarah plantation has been incorporated with the Sitapahar plantation.
Pahartalli	5	324 14 6	.....	.....	5	324 14 6	
Total ...	427	30,436 4 5	63	7,061 10 0	490	37,497 14 5	
Add—							
Amount expended on failures ...	.....	389 8 3	.....	.....	.....	389 8 3	
Ditto on account of other provinces.	.....	.....	.....	110 12 0	.....	110 12 0	
Grand Total ...	427	30,825 12 8	63	7,172 6 0	490	37,998 2 8	

FOREST DEPARTMENT, BENGAL.

Area of Forest Tracts protected from Fire up to 1875-76.

FORESTS.	Area in 1874-75.	Total cost.	Additional area protected in 1875-76.	Amount expended in 1875-76.	Total area protected up to 1875-76.	Total expenditure incurred up to 1875-76	REMARKS.
Darjeeling Division.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	
Sivok	1,554	166 1 0	.....	272 15 6	.....	439 0 6	Both forests were burnt in 1875-76.
Julpigoree Division.							
Muraghat	10,920	124 10 0	.....	135 12 0	.....	260 6 0	
Total ...	12,474	290 11 0	.....	408 11 6	.....	699 6 6	

FOREST DEPARTMENT, BENGAL.

Prosecutions for Breaches of Forest Rules during 1875-76.

DIVISIONS.	No. OF PROSECUTIONS.		CONVICTIONS OBTAINED OR STILL PENDING.			
	Number of cases.	Number of persons.	Number of cases.		Number of persons.	
			Convictions.	Pending.	Convicted.	Under trial.
Darjeeling Division	13	15	10	.....	12	.....
Julpigoree "	3	26	3	.....	8	.....
Soonderbuns "	7	22	6	1	18	4
Chittagong "	7	10	3	.....	3	.....
Total ...	30	73	22	1	41	4

APPENDIX A.

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
Acres 14,433; square miles 22·24.	**Block 1**, *situated in Tuppeh Barasand.*					Acres.					
	North.—The boundary between Turer and Latoo mouzahs until reaching the Latoo river; down same, until where it begins to flow north; then a demarcated line running from the latter point to the Borhee nuddy in a south-eastwardly direction; then up the Borhee nuddy until reaching the boundary between Koojrum and Bagechumpa mouzahs; from here it runs east along the boundary between these two mouzahs; then a demarcated line running first south-east and then east on to the Lat-Barasand road. *East.*—The Lat-Barasand road until reaching the river forming the boundary between Barasand and Dedigaun mouzahs; then for a short distance, about one mile down the river; then a demarcated line running in a southerly direction until reaching the Paharkoocha nuddy; then east up the river until a short distance east of the Lat-Barasand road; from here south along the Lat-Barasand road until reaching the boundary between Ramseelee and Chetmah mouzahs. *South.*—The boundary between Ramseelee and Chetma mouzahs until reaching the Borhee nuddy; down same until its junction with the Chorhoo nuddy; then up the Chorhoo nuddy to the boundary between Palamow and Sirgoojah State. *West.*—The boundary between Palamow and Sirgoojah State.	The southern portion consists principally of *sál*, none of which is of any great size; the northern portion contains some good trees, principally *persar* and *thos*. The *sál* is found all through this large area. This block is rich in bamboos in the northern part, but poor in the southern.	Boorwa nuddy and Koel river.	No actual villages, but merely a few squatters here and there.	25	252	1·74	Asan ...	86,886	17,175	5,946
								Gamhar ...	4,979	3,551	687
								Garso ...	114	114	114
								Ginyan ...	13,059	5,669	1,488
								Jamun ...	.....	.....	.....
								Jamti ...	7,158	3,998	2,464
								Khaua ...	57	.....	114
								Karam ...	4,675	1,430	860
								Khair ...	71,732	974	171
								Kumbi ...	573	171	.....
								Kusum ...	8,227	3,206	1,318
								Mahwa ...	17,320	7,504	4,635
								Paras ...	1,775	171	171
								Persar ...	17,421	8,227	5,665
								Sakwa ...	469,216	25,835	6,307
								Seeda ...	9,237	4,130	286
								Dowta ...	156,453	30,742	6,408
								Then ...	66,690	9,716	1,318
								Sissu ...	5,956	1,374	286
								Total ...	941,418	123,967	38,238
Acres 11,243; square miles 17·31.	**Block 2**, *situated in Tuppeh Barasand.*										
	North.—The portion of the Koel river between the Huree and Hulhud mouzahs. *East.*—The boundary between Barasand and Seemah tuppehs; then the boundary between Barasand and Checharee tuppehs. *West.*—A demarcated line running first about 1½ mile north, then ¼ a mile north-east, and then 1½ mile north-west, until reaching the boundary between Paharkoocha and Myapoor mouzahs; then north along the Paharkoocha and Myapoor boundary until reaching the boundary between Myapoor and Barasand; then a demarcated line running north-west, until reaching the Tenoo mouzah boundary; then north-east along the boundary between Barasand and Tenoo mouzahs for about two miles; then nearly due west until reaching the Tenoo river; down same until reaching the boundary between Gungtur and Tenoo mouzahs; then along the boundary between Gungtur and Hulhud for about half a mile; and then a demarcated line running in a general north-east direction until reaching a small nuddy which there forms the boundary to the Koel river.	That portion of the block lying in the Paharkoocha mouzah contains some very fine *sál* timber. This block is rich in bamboos all through.	Barasand road and Koel river.	Lubra in Barasand mouzah, besides squatters scattered through the block.	28 30	194	1·72	Asan ...	35,236	12,113	6,201
								Gamhar ...	1,795	2,434	657
								Garso ...	637	1,274	696
								Ginyan ...	1,686	5,100	928
								Jamun ...	174	58	.....
								Jamti ...	2,610	2,203	1,102
								Khaua ...	58	...	.....
								Karam ...	4,459	1,102	522
								Khair ...	64,676	1,911	352
								Kumbi ...	464	348	.....
								Kusum ...	7,881	2,724	1,218
								Mahwa ...	1,274	1,392	522
								Paras ...	4,299	928	174
								Persar ...	15,125	78,251	3,766
								Sakwa ...	117,035	23,756	11,805
								Seeda ...	5,528	5,037	579
								Dowta ...	63,748	18,258	5,100
								Then ...	31,413	2,807	579
								Sissu ...	10,951	2,550	522
								Total ...	309,039	162,336	34,583
Acres 7,300; square miles 11·41.	**Block 3**, *situated in Tuppeh Seemah.*										
	North.—The boundary between Sooceyahkhar and Maromand mouzahs; then the boundary between Datrum and Maromand mouzahs; then runs north along the boundary between Kudlut and Maromand; and then along the boundary between Kudlut and Urman mouzahs. *East.*—The boundary between Kudlut and Holook; and then along the boundary between Kudlut and Surum; then the boundary between Datrum and Dareechapur; then the boundary between Datrum and Jaigir; then a demarcated line running north-west to the boundary of the Datrum and Sooceyahkhar mouzahs; then runs south along the boundary between Sooceyahkhar and Karee, and Sooceyahkhar and Bigatola mouzahs. *South.*—The boundary between Seemah and Chicharee tuppehs. *West.*—The boundary between Seemah and Barasand tuppehs.	In the southern portion there is some fine timber. This block is rich in bamboos all through.	The Koel river.	None ...	None	75	1·03	Asan ...	53,947	8,030	2,366
								Gamhar ...	1,606	1,022	146
								Garso ...	146	182	73
								Ginyan ...	3,869	949	219
								Jamun ...	102	88	29
								Jamti ...	4,307	3,577	2,044
								Khaua ...	22	15	15
								Karam ...	1,387	803	365
								Khair ...	44,311	511	73
								Kumbi ...	219	109	73
								Kusum ...	3,139	1,604	876
								Mahwa ...	11,169	4,964	2,263
								Paras ...	2,993	657	146
								Persar ...	6,570	4,745	2,117
								Sakwa ...	314,192	9,125	3,504
								Seeda ...	36,281	1,898	292
								Dowta ...	85,629	15,914	2,701
								Then ...	43,289	4,818	584
								Sissu ...	4,015	1,168	292
								Total ...	617,198	60,179	18,178

Forests in the Palamow Forest Division.

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
274	515	57	...	...	...	...	...	110,855	6·02	1·19	0·41	0·19	0·04	0·004	.....	.....	.....	.....	.....	7·854
57	.....	.....	...	...	...	...	...	9,274	0·34	0·25	0·05	0·004	.....	.....	.....	.....	.....	.....	.....	0·644
57	114	.....	...	...	...	...	...	513	0·008	0·008	0·008	0·004	0·008	.....	.....	.....	.....	.....	.....	0·036
573	114	.....	...	...	...	...	...	20,903	0·90	0·30	0·10	0·04	0·008	.....	.....	.....	.....	.....	.....	1·438
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,030	.....	.....	...	...	...	...	...	14,650	0·50	0·28	0·17	0·07	.....	.....	.....	.....	.....	.....	.....	1·02
.....	.....	.....	...	...	57	...	...	228	0·004	.....	0·008	.....	.....	.....	.....	.....	0·004	.....	.....	0·016
171	229	171	...	...	...	...	...	7,436	0·31	0·09	0·06	0·01	0·02	0·01	.....	.....	.....	.....	.....	0·50
.....	.....	.....	...	...	...	...	...	72,877	4·97	0·07	0·01	.....	.....	.....	.....	.....	.....	.....	.....	5·05
.....	.....	.....	...	...	...	...	...	744	0·04	0·01	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·05
515	114	.....	...	...	...	...	...	13,380	0·57	0·22	0·09	0·04	0·008	...	.....	.....	.....	.....	.....	0·928
1,456	400	57	...	...	...	57	...	31,403	1·20	0·51	0·36	0·10	0·03	0·004	.....	.....	.....	0·004	.....	2·208
.....	.....	.....	...	...	...	...	...	2,117	0·12	0·01	0·01	.....	.....	.....	.....	.....	.....	.....	.....	0·14
4,490	1,261	229	57	...	...	...	...	37,350	1·20	0·60	0·40	0·30	0·09	0·02	0·004	.....	.....	.....	.....	2·614
2,800	400	57	57	...	57	...	...	504,729	32·51	1·80	0·43	0·20	0·03	0·004	0·004	.....	0·004	.....	.....	34·982
57	.....	.....	...	...	...	...	...	13,710	6·04	0·35	0·02	0·004	.....	.....	.....	.....	.....	.....	.....	6·414
1,545	171	.....	...	...	...	...	...	195,319	10·84	2·13	0·44	0·10	0·01	.....	.....	.....	.....	.....	.....	13·52
515	57	.....	...	...	...	...	...	78,286	4·62	0·67	0·09	0·04	0·004	.....	.....	.....	.....	.....	.....	5·424
.....	.....	.....	...	...	...	...	...	7,616	0·31	0·09	0·02	.....	.....	.....	.....	.....	.....	.....	.....	0·42
13,514	3,375	571	114	...	114	57	...	1,121,388	70·502	8·668	2·676	1·102	0·248	0·042	0·008	.....	0·008	0·004	.....	83·258
4,752	2,087	290	...	...	...	...	...	60,679	3·13	1·08	0·55	0·42	0·19	0·03	.....	.....	.....	.....	.....	5·40
58	.....	.....	...	...	...	...	...	4,924	0·16	0·23	0·06	0·005	.....	.....	.....	.....	.....	.....	.....	0·445
637	174	58	...	...	...	...	...	3,476	0·05	0·11	0·06	0·06	0·02	0·005	.....	.....	.....	.....	.....	0·305
232	174	.....	...	...	...	...	...	8,120	1·50	0·45	0·08	0·02	0·02	.....	.....	.....	.....	.....	.....	2·07
.....	.....	.....	...	...	...	...	...	232	0·02	0·005	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·025
290	58	.....	...	...	...	...	...	6,263	0·23	0·19	1·10	0·08	0·005	.....	.....	.....	.....	.....	.....	0·555
58	.....	.....	...	...	...	...	...	58	0·005	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·005
290	116	58	...	...	...	...	...	6,547	0·39	0·10	0·05	0·03	0·01	0·005	.....	.....	.....	.....	.....	0·545
.....	.....	.....	...	...	...	...	...	60,819	5·75	0·17	0·02	.....	.....	.....	.....	.....	.....	.....	.....	5·94
.....	.....	.....	...	...	...	...	...	812	0·04	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·07
753	232	.....	...	...	...	...	...	12,808	0·70	0·24	0·11	0·07	0·02	.....	.....	.....	.....	.....	.....	1·14
406	58	58	58	...	...	...	...	3,768	0·11	0·12	0·05	0·04	0·005	0·005	0·005	.....	.....	.....	.....	0·355
58	58	.....	...	...	...	...	...	5,507	0·58	0·08	0·02	0·005	0·005	.....	.....	.....	.....	.....	.....	0·490
3,060	1,675	232	...	...	...	...	...	102,118	1·35	0·90	0·33	0·27	0·15	0·02	.....	.....	.....	.....	.....	9·08
8,747	3,879	1,044	174	116	...	...	...	166,556	19·30	2·11	1·05	0·78	0·34	0·09	0·02	0·01	.....	.....	.....	23·70
116	.....	.....	...	...	...	...	...	11,260	0·40	0·45	0·05	0·01	.....	.....	.....	.....	.....	.....	.....	1·00
2,372	290	.....	...	...	...	...	...	89,768	5·67	1·62	0·45	0·21	0·03	.....	.....	.....	.....	.....	.....	7·98
232	58	.....	...	...	...	...	...	35,179	2·79	2·58	0·05	0·02	0·008	.....	.....	.....	.....	.....	.....	5·445
348	.....	.....	...	...	...	...	...	14,371	0·97	0·23	0·05	0·03	.....	.....	.....	.....	.....	.....	.....	1·28
22,360	8,859	1,740	232	116	...	...	...	599,265	43·035	16·745	3·08	2·006	0·800	0·155	0·025	0·01	.....	.....	.....	65·850
1,095	365	146	...	...	...	...	...	65,940	7·30	1·10	0·32	0·15	0·05	0·02	.....	.....	.....	.....	.....	9·03
44	.....	.....	...	...	...	...	...	2,818	0·22	0·14	0·02	0·006	.....	.....	.....	.....	.....	.....	.....	0·386
44	.....	.....	...	...	...	...	...	445	0·02	0·025	0·01	0·006	.....	.....	.....	.....	.....	.....	.....	0·061
219	51	29	...	...	...	...	...	5,336	0·53	0·13	0·03	0·03	0·007	0·004	.....	.....	.....	.....	.....	0·731
7	22	22	...	...	...	...	...	270	0·014	0·012	0·004	0·001	0·003	0·003	.....	.....	.....	.....	.....	0·037
798	109	.....	...	...	...	...	...	10,745	0·59	0·49	0·28	0·097	0·015	.....	.....	.....	.....	.....	.....	1·472
15	.....	.....	...	...	...	...	...	67	0·003	0·002	0·002	0·002	.....	.....	.....	.....	.....	.....	.....	0·009
182	73	43	...	...	...	...	...	2,853	0·19	0·11	0·05	0·025	0·01	0·006	.....	.....	.....	.....	.....	0·301
.....	.....	.....	...	...	...	...	...	44,895	0·07	0·07	0·01	.....	.....	.....	.....	.....	.....	.....	.....	0·15
.....	.....	.....	...	...	...	...	...	401	0·03	0·015	0·01	.....	.....	.....	.....	.....	.....	.....	.....	0·055
438	219	7	...	...	...	...	...	6,283	0·43	0·22	0·12	0·06	0·03	0·001	.....	.....	.....	.....	.....	0·861
949	292	15	...	...	...	...	...	19,652	1·53	0·68	0·31	0·13	0·04	0·002	.....	.....	.....	.....	.....	2·652
73	.....	.....	...	...	...	...	...	3,809	0·41	0·09	0·02	0·01	.....	.....	.....	.....	.....	.....	.....	0·53
1,460	511	73	7	...	...	...	...	15,483	0·90	0·65	0·29	0·20	0·07	0·01	0·001	.....	.....	.....	.....	2·121
1,460	584	73	73	22	...	...	...	329,033	43·04	1·25	0·48	0·20	0·08	0·01	0·01	0·003	.....	.....	.....	45·073
36	.....	.....	...	...	...	...	...	38,507	4·97	0·28	0·04	0·005	.....	.....	.....	.....	.....	.....	.....	5·275
657	36	.....	...	...	...	...	...	104,937	11·73	2·18	0·37	0·09	0·005	.....	.....	.....	.....	.....	.....	14·375
292	29	.....	...	...	...	...	...	49,012	5·23	0·66	0·08	0·04	0·004	.....	.....	.....	.....	.....	.....	6·714
73	.....	.....	...	...	...	...	...	5,548	0·55	0·16	0·04	0·01	.....	.....	.....	.....	.....	.....	.....	0·76
7,732	2,291	408	80	22	...	...	...	706,103	84·547	8·244	2·486	1·062	0·314	0·056	0·011	0·003	.....	.....	.....	96·723

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
Acres 8,203; square miles 12·81.	**Block 4, *situated in Tuppeh Seemah.***					Acres.					
	North.—The boundary between the Kanteh and Bareedohur mouzahs; then a demarcated line running south until reaching the boundary between Kanteh and Bookkikona; then south-east along the boundary between Kanteh and Bookkikona, until reaching the boundary between Kanteh and Gadeetam; then north-east along the boundary between Gadeetam and Toreedag; from here south-west along the boundary between Gadeetam and Bareeato; then south-east along the boundary between Pindra and Bareeato; then *East.*—South along the boundary between Pindra and Bareeato; then south-west along the boundary between Pindra and Ghootoowa; then north along a demarcated line for about 1¼ miles; then west along a demarcated line until reaching the Nowatolah boundary; then along the boundary between Nowatolah and Pindra for about 1¼ miles; then south along a demarcated line on to the Neturhaut boundary; then south-east along the Neturhaut boundary until reaching the Burwah boundary. *South.*—A demarcated line running south-west until reaching the Chicharee boundary. *West.*—The boundary between Seemah and Chicharee; then along the boundary between Gadeetam and Bookkikona (first north-east then south-east); then a demarcated line running north to the Kanteh boundary; and finally west along the boundary between Bookkikona and Kanteh.	This block consists principally of *sál*, some of which is of fair proportional demensions; moderately rich in places in bamboos.	The Koel river.	None ...	None	91	1·11	Asan ... Gamhar ... Garso ... Ginyan ... Jamun ... Jamti ... Khaua ... Karam ... Khair ... Kumbi ... Kusum ... Mahwa ... Paras ... Persar ... Sakwa ... Seeda ... Dowta ... Then ... Sissu ... Total ...	37,474 2,050 2,375 9,840 ..... 3,034 240 2,952 43,852 410 4,756 5,002 3,280 8,774 316,274 26,732 66,748 29,028 5,404 568,321	9,266 1,886 410 3,444 ..... 1,068 ..... 902 984 246 1,968 2,542 820 30,586 16,072 3,116 15,088 12,628 1,312 103,238	3,936 410 168 738 ..... 5,166 ..... 328 84 ..... 820 1,722 164 3,034 5,904 246 3,854 492 246 27,312
Acres 805; square miles 1·26.	**Block 5, *situated in Tuppeh Seemah.***										
	North.—The boundary between Hoorhoorkurcha and Bijaipoor. *East.*—The Koel river. *South.*—The Koel river. *West.*—A demarcated line running north from the Koel river to the boundary between Hoorhoorkurcha and Bijaipore.	Contents chiefly *sál*: poor in bamboos.	The Koel river.	None ...	None	15	1·87	Asan ... Gamhar ... Garso ... Ginyan ... Jamun ... Jamti ... Khaua ... Karam ... Khair ... Kumbi ... Kusum ... Mahwa ... Paras ... Persar ... Sakwa ... Seeda ... Dowta ... Then ... Sissu ... Total ...	8,855 40 ..... 225 ..... 741 ..... 24 7,446 16 40 98 59 411 40,218 4,301 939 2,429 56 65,926	805 588 612 72 ..... 469 .... 137 ..... 105 32 97 258 3,220 80 845 48 7,398	193 ..... 16 8 ..... 290 .... 8 8 97 56 8 161 1,240 8 137 8 16 2,254
Acres 626; square miles 0·98.	**Block 6, *situated in Tuppeh Seemah.***										
	North.—The river forming the boundary between Seemah and Chanpee mouzahs. *East.*—The Koel river. *South.*—The boundary between the Chanpee and Rood mouzahs. *West.*—The Seemah-Gungtur road.	This block consists principally of young *sál*, some of which is of fair dimensions; poor as regards bamboos.	The Koel river.	One house ...	1	34	5·43	Asan ... Gamhar ... Garso ... Ginyan ... Jamun ... Jamti ... Khaua ... Karam ... Khair ... Kumbi ... Kusum ... Mahwa ... Paras ... Persar ... Sakwa ... Seeda ... Dowta ... Then ... Sissu ... Total ...	6,648 37 ..... 202 ..... 441 ..... 55 3,737 37 74 129 184 202 27,838 2,836 7,900 1,233 51,553	736 92 37 55 ..... 388 .... 129 ..... 74 18 148 220 3,704 55 809 74 6,629	74 ..... 18 .... 220 .... 18 .... 55 ..... 165 1,320 ..... 74 18 1,962

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
2,460	902	139	...	...	...	...	...	54,177	4·57	1·13	0·48	0·30	0·11	0·017	...	...	...	...	...	6·607
...	...	...	...	...	...	...	...	4,346	0·25	0·23	0·05	...	...	...	...	...	...	...	...	0·53
168	...	...	...	...	...	...	...	3,121	0·29	0·05	0·02	0·02	...	...	...	...	...	...	...	0·38
246	84	...	...	...	...	...	...	14,352	1·20	0·42	0·09	0·03	0·01	...	...	...	...	...	...	1·75
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
410	...	...	...	...	...	...	...	10,578	0·37	0·24	0·63	0·05	...	...	...	...	...	...	...	1·29
...	...	...	...	...	...	...	...	246	0·03	...	...	...	...	...	...	...	...	...	...	0·03
168	84	...	...	...	...	...	...	4,434	0·36	0·11	0·04	0·02	0·01	...	...	...	...	...	...	0·54
...	...	...	...	...	...	...	...	44,920	5·36	0·12	0·01	...	...	...	...	...	...	...	...	5·49
...	...	...	...	...	...	...	...	656	0·05	0·03	...	...	...	...	...	...	...	...	...	0·08
410	82	...	...	...	...	...	...	8,036	0·58	0·24	0·10	0·05	0·01	...	...	...	...	...	...	0·98
574	82	...	...	...	...	...	...	9,022	0·61	0·31	0·21	0·07	0·01	...	...	...	...	...	...	1·21
...	...	...	...	...	...	...	...	4,264	0·40	0·10	0·02	...	...	...	...	...	...	...	...	0·52
2,296	984	164	...	...	...	...	...	45,838	1·07	3·73	0·37	0·28	0·12	0·02	...	...	...	...	...	5·59
3,936	1,476	328	82	...	...	...	...	344,072	38·57	1·96	0·72	0·48	0·18	0·04	0·01	...	...	...	...	41·96
24	...	...	...	...	...	...	...	30,118	3·26	0·38	0·08	0·003	...	...	...	...	...	...	...	3·673
1,230	82	...	...	...	...	...	...	87,002	8·14	1·84	0·47	0·15	0·01	...	...	...	...	...	...	10·61
246	...	...	...	...	...	...	...	42,304	3·54	1·54	0·06	0·03	...	...	...	...	...	...	...	5·17
...	...	...	...	...	...	...	...	7,052	0·67	0·16	0·03	...	...	...	...	...	...	...	...	0·86
12,168	3,776	631	82	...	...	...	...	715,528	69·32	12·59	3·33	1·483	0·46	0·077	0·01	...	...	...	...	87·270
72	48	...	...	...	...	...	...	9,073	11·18	1·16	0·24	0·09	0·06	...	...	...	...	...	...	12·73
16	...	...	...	...	...	...	...	644	0·05	0·73	...	0·02	...	...	...	...	...	...	...	0·80
16	8	...	...	...	...	...	...	652	...	0·76	0·02	0·02	0·01	...	...	...	...	...	...	0·81
16	8	169	8	...	...	...	...	506	0·29	0·09	0·01	0·02	0·01	0·21	0·01	...	...	...	...	0·63
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
48	...	...	...	...	...	...	...	1,578	0·92	0·62	0·36	0·06	...	...	...	...	...	...	...	1·96
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	24	0·03	...	...	...	...	...	...	...	...	...	...	0·03
...	16	...	...	...	...	...	...	7,607	9·25	0·17	0·01	...	0·02	...	...	...	...	...	...	9·45
...	...	...	...	...	...	...	...	24	0·02	...	0·01	...	...	...	...	...	...	...	...	0·03
48	24	8	...	...	...	...	...	322	0·05	0·13	0·12	0·06	0·03	0·01	...	...	...	...	...	0·40
24	24	...	...	...	...	...	...	232	0·12	0·04	0·07	0·03	0·03	...	...	...	...	...	...	0·29
16	...	...	...	...	...	...	...	210	0·11	0·12	0·01	0·02	...	...	...	...	...	...	...	0·26
97	56	16	...	...	...	...	...	999	0·51	0·32	0·20	0·12	0·07	0·02	...	...	...	...	...	1·24
336	250	32	8	...	8	...	...	45,362	49·96	4·00	1·54	0·48	0·31	0·04	0·01	...	0·01	...	...	56·35
...	...	...	...	...	...	...	...	4,389	5·35	0·10	0·01	...	...	...	...	...	...	...	...	5·46
64	...	...	...	...	...	...	...	1,985	11·05	1·05	0·17	0·08	...	...	...	...	...	...	...	12·35
...	...	...	...	...	...	...	...	2,485	3·03	0·06	0·01	...	...	...	...	...	...	...	...	3·10
...	...	...	...	...	...	...	...	72	0·07	0·02	...	...	...	...	...	...	...	...	...	0·09
803	434	225	16	...	8	...	...	77,064	91·98	9·37	2·78	1·09	0·54	0·28	0·02	...	0·01	...	...	105·98
18	18	...	...	...	...	...	...	7,494	10·62	1·18	0·12	0·03	0·03	...	...	...	...	...	...	11·98
...	...	...	...	...	...	...	...	129	0·06	0·15	...	...	...	...	...	...	...	...	...	0·21
...	18	...	...	...	...	...	...	73	...	0·059	0·03	...	0·03	...	...	...	...	...	...	0·119
37	18	18	18	...	...	...	...	348	0·32	0·09	...	0·06	0·03	0·03	0·03	...	...	...	...	0·56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	1,067	0·70	0·62	0·35	0·03	...	...	...	...	...	...	...	1·70
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	55	0·09	...	...	...	...	...	...	...	...	...	...	0·09
...	...	...	...	...	...	...	...	3,884	5·97	0·21	0·03	...	...	...	...	...	...	...	...	6·21
...	...	...	...	...	...	...	...	37	0·06	...	...	...	...	...	...	...	...	...	...	0·06
18	18	...	...	...	...	...	...	184	0·12	0·12	...	0·03	0·03	...	...	...	...	...	...	0·30
18	18	...	...	...	...	...	...	238	0·21	0·03	0·09	0·03	0·03	...	...	...	...	...	...	0·39
...	...	...	...	...	...	...	...	332	0·29	0·23	...	...	...	...	...	...	...	...	...	0·52
74	92	...	...	...	...	...	...	753	0·32	0·35	0·26	0·12	0·15	...	...	...	...	...	...	1·20
258	120	18	...	...	18	...	...	63,375	44·47	6·06	2·12	0·41	0·21	0·03	...	...	0·03	...	...	53·33
...	...	...	...	...	...	...	...	2,891	4·53	0·09	...	...	...	...	...	...	...	...	...	4·62
18	...	...	...	...	...	...	...	8,801	12·62	1·29	0·12	0·03	...	...	...	...	...	...	...	14·06
...	...	...	...	...	...	...	...	1,325	1·97	0·12	0·03	...	...	...	...	...	...	...	...	2·12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
459	311	36	18	...	18	...	...	60,986	82·35	10·599	3·15	0·74	0·51	0·06	0·03	...	0·03	...	...	97·469

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
Acres 692; square miles 1·08.	**Block 7,** *situated in Tuppeh Seemah.*					Acres.					
	North.—The boundary between Sulweh and Hoordag mouzahs. *East.*—The Koel river. *South.*—The Koel river; then a demarcated line running in a westwardly direction until reaching the Sulweh river. *West.*—A demarcated line running from the Sulweh river to the road where the boundary between Hoordag and Sulweh mouzahs cuts it.	Contents chiefly *sál*, with some good trees; poor in bamboos.	The Koel river.	None ...	None	29	4·2	Asan ...	7,206	644	107
								Gamhar ...	72	48	.....
								Garso ...	.....	119	24
								Ginyan ...	286	48	24
								Jamun ...	.....	.....	.....
								Jamti ...	477	429	429
								Khaua ...	.....	.....	.....
								Karam ...	.....	.....	.....
								Khair ...	8,590	72	.....
								Kumbi ...	.....	.....	24
								Kusum ...	24	48	119
								Mahwa ...	96	72	48
								Paras ...	24	48	24
								Persar ...	406	334	192
								Sakwa ...	33,669	1,599	907
								Seeda ...	4,512	144	24
								Dowta ...	9,927	935	144
								Then ...	1,695	.....	.....
								Sissu ...	144	48	.....
								Total ...	67,128	4,618	2,126
Acres 421; square miles 0·66.	**Block 8,** *situated in Tuppeh Seemah.*										
	North.—The Koel river. *East.*—A demarcated line running south-east from the Koel to the Chouput nuddy; then south till it meets the Koel. *South.*—The Koel river. *West.*—The Koel river.	A very well stocked *sál* forest, with some good trees; poor in bamboos.	The Koel river and Sulweh road.	None ...	None	16	3·8	Asan ...	5,262	579	158
								Gamhar ...	.....	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	53	53	.....
								Jamun ...	.....	.....	.....
								Jamti ...	579	263	53
								Khaua ...	.....	.....	.....
								Karam ...	.....	.....	.....
								Khair ...	3,974	79	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	79	79
								Mahwa ...	.....	26	.....
								Paras ...	447	158	105
								Persar ...	263	53	26
								Sakwa ...	23,892	1,527	501
								Seeda ...	2,155	.....	.....
								Dowta ...	2,606	210	79
								Then ...	1,973	26	.....
								Sissu ...	.....	.....	.....
								Total ...	41,154	3,053	1,001
Acres 405; square miles 0·63.	**Block 9,** *situated in Tuppeh Seemah.*										
	North.—The boundary between the Kaseegudha and Lalo mouzahs. *East.*—Ditto ditto ditto. *South.*—The bounday between Kaseegudha and Kasmar. *West.*—The river forming the boundary between Kaseegudha and Bindwa, and then the boundary betwen Kaseegudha and Chorha.	Chiefly a young *sál* forest broken by several patches of cultivation; contains little mature timber; poor in bamboos.	The Koel river.	None ...	None	27	6·66	Asan ...	2,264	705	150
								Gamhar ...	.....	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	45	15	.....
								Jamun ...	.....	.....	.....
								Jamti ...	240	330	180
								Khaua ...	.....	.....	.....
								Karam ...	.....	15	15
								Khair ...	1,142	45	.....
								Kumbi ...	.....	45	.....
								Kusum ...	45	15	90
								Mahwa ...	75	105	.....
								Paras ...	.....	45	.....
								Persar ...	60	105	105
								Sakwa ...	14,353	525	90
								Seeda ...	210	75	15
								Dowta ...	2,908	494	60
								Then ...	300	15	.....
								Sissu ...	30	60	15
								Total ...	21,072	2,594	720
Acres 907; square miles 1·42.	**Block 10,** *situated in Tuppeh Seemah.*										
	North.—The boundary between the Gotag and Surjoo mouzahs. *East.*—The boundary between the Gotag and Bulbul mouzahs; then a demarcated line running a short distance west from the Gotag-Bulbul boundary to the Gotag-Pehlaputhul mouzahs; then along the boundary of the Pehlaputhul and Gotag mouzahs until reaching the Chouput river. *South.*—The Chouput river.	Consists principally of *sál*, some of which is of fair dimensions; poor in bamboos.	Chouput nuddy.	None ...	None	30	3·26	Asan ...	5,411	1,118	121
								Gamhar ...	121	60	.....
								Garso ...	.....	.....	.....
								Ginyan ...	181	90	.....
								Jamun ...	.....	.....	.....
								Jamti ...	513	816	181
								Khaua ...	.....	.....	.....
								Karam ...	30	80	60
								Khair ...	.....	.....	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	695	60	30

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
96	96	.....	...	...	...	...	...	8,209	10·41	0·93	0·24	0·14	0·14	.....	.....	.....	.....	.....	.....	11·86
.....	.....	.....	...	...	...	...	...	120	0·10	0·069	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·169
48	.....	.....	...	...	...	...	...	191	.....	0·17	0·03	0·07	.....	.....	.....	.....	.....	.....	.....	0·27
.....	.....	.....	...	...	...	...	...	358	0·414	0·07	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·514
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
118	.....	.....	...	...	...	...	...	1,453	0·69	0·62	0·62	0·17	.....	.....	.....	.....	.....	.....	.....	2·10
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	48	.....	...	...	...	...	...	8,710	12·41	0·10	...	.....	0·07	.....	.....	.....	.....	.....	.....	12·58
.....	.....	.....	...	...	...	...	...	24	.....	.....	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·03
24	48	24	...	...	...	...	...	287	0·03	0·07	0·17	0·03	0·07	0·03	.....	.....	.....	.....	.....	0·40
48	.....	.....	...	...	...	...	...	260	0·14	0·10	0·07	0·07	.....	.....	.....	.....	.....	.....	.....	0·38
.....	.....	.....	...	...	...	...	...	96	0·03	0·07	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·13
119	.....	.....	...	...	...	...	...	1,051	0·59	0·48	0·28	0·17	.....	.....	.....	.....	.....	.....	.....	1·52
357	167	72	24	...	...	...	...	36,795	48·65	2·31	1·31	0·52	0·24	0·10	0·03	.....	.....	.....	.....	53·16
.....	.....	.....	...	...	...	...	...	4,680	6·52	0·21	0·03	.....	.....	.....	.....	.....	.....	.....	.....	6·76
96	.....	.....	...	...	...	...	...	11,132	14·34	1·37	0·21	0·14	.....	.....	.....	.....	.....	.....	.....	16·06
.....	.....	.....	...	...	...	...	...	1,695	2·45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2·45
.....	.....	.....	...	...	...	...	...	192	0·21	0·07	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·28
906	359	96	24	...	...	...	...	75,257	96·989	6·639	3·05	1·31	0·52	0·13	0·03	.....	.....	.....	.....	108·088
53	.....	.....	...	...	...	...	...	6,052	12·50	1·37	0·37	0·12	.....	.....	.....	.....	.....	.....	.....	14·36
26	.....	.....	...	...	...	...	...	26	.....	.....	.....	0·06	.....	.....	.....	.....	.....	.....	.....	0·06
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
53	.....	26	...	...	...	...	...	185	0·12	0·12	.....	0·12	.....	0·06	.....	.....	.....	.....	.....	0·42
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	895	1·37	0·62	0·12	.....	.....	.....	.....	.....	.....	.....	.....	2·11
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	26	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·06	0·06
.....	.....	.....	...	...	...	...	...	4,053	9·37	0·19	.....	.....	.....	.....	.....	.....	.....	.....	.....	9·56
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
53	.....	.....	...	...	...	...	...	211	.....	0·19	0·19	0·12	.....	.....	.....	.....	.....	.....	.....	0·50
26	.....	.....	...	...	...	...	...	52	.....	0·06	.....	0·06	.....	.....	.....	.....	.....	.....	.....	0·12
.....	.....	.....	...	...	...	...	...	710	1·06	0·37	0·25	.....	.....	.....	.....	.....	.....	.....	.....	1·68
26	26	26	...	...	...	...	...	420	0·62	0·12	0·06	0·06	0·06	0·06	.....	.....	.....	.....	.....	0·98
210	79	.....	...	...	...	...	...	26,209	50·75	3·62	1·19	0·50	0·19	.....	.....	.....	.....	.....	.....	62·25
.....	.....	.....	...	...	...	...	...	2,105	5·00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5·00
26	.....	.....	...	...	...	...	...	2,921	6·19	0·50	0·19	0·06	.....	.....	.....	.....	.....	.....	.....	6·94
.....	.....	.....	...	...	...	...	...	1,999	4·68	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	4·74
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
473	105	52	...	...	...	...	26	45,864	97·06	7·22	2·37	1·10	0·25	0·12	.....	.....	.....	.....	0·06	108·78
121	60	.....	...	...	...	...	...	3,300	5·59	1·74	0·37	0·30	0·15	.....	.....	.....	.....	.....	.....	8·15
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	...	...	...	...	...	75	0·11	0·04	.....	0·04	.....	.....	.....	.....	.....	.....	.....	0·19
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	15	15	...	...	...	...	...	780	0·59	0·81	0·44	.....	0·04	0·04	.....	.....	.....	.....	.....	1·92
15	.....	.....	...	...	...	...	...	15	.....	.....	.....	0·04	.....	.....	.....	.....	.....	.....	.....	0·04
.....	.....	.....	...	...	...	...	...	30	.....	0·04	0·04	.....	.....	.....	.....	.....	.....	.....	.....	0·08
.....	.....	.....	...	...	...	...	...	1,187	2·82	0·11	.....	.....	.....	.....	.....	.....	.....	.....	.....	2·93
30	.....	.....	...	...	...	...	...	75	.....	0·04	.....	0·07	.....	.....	.....	.....	.....	.....	.....	0·11
90	15	.....	...	...	...	...	...	255	0·11	0·04	0·22	0·22	0·04	.....	.....	.....	.....	.....	.....	0·63
15	.....	.....	...	...	...	...	...	195	0·18	0·26	.....	0·04	.....	.....	.....	.....	.....	.....	.....	0·48
.....	.....	.....	...	...	...	...	...	45	.....	0·11	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·11
30	45	15	...	...	...	...	...	360	0·15	0·26	0·26	0·07	0·11	0·04	.....	.....	.....	.....	.....	0·89
75	90	.....	...	...	...	15	...	15,148	35·44	1·30	0·22	0·18	0·22	.....	.....	.....	.....	0·04	.....	37·40
15	.....	.....	...	...	...	...	...	315	0·52	0·18	0·04	0·04	.....	.....	.....	.....	.....	.....	.....	0·78
30	.....	.....	...	...	...	...	...	3,492	7·18	1·22	0·15	0·07	.....	.....	.....	.....	.....	.....	.....	8·62
.....	.....	.....	...	...	...	...	...	315	0·74	0·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·78
.....	.....	.....	...	...	...	...	...	105	0·07	0·15	0·04	.....	.....	.....	.....	.....	.....	.....	.....	0·26
436	225	30	...	...	...	15	...	25,692	53·50	6·34	1·78	1·07	0·56	0·08	.....	.....	.....	0·04	.....	63·37
30	.....	.....	...	...	...	...	...	6,680	5·97	1·23	0·13	0·03	.....	.....	.....	.....	.....	.....	.....	7·36
.....	.....	.....	...	...	...	...	...	181	0·12	0·07	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·20
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	271	0·20	0·10	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·30
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
90	.....	.....	...	...	...	...	...	1,600	0·37	0·90	0·20	0·10	.....	.....	.....	.....	.....	.....	.....	1·77
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	150	0·08	0·03	0·07	0·03	.....	.....	.....	.....	.....	.....	.....	0·16
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	785	0·77	0·06	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·86

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
						Acres.					
Acres 207; square miles 1·42.	**Block 10**, *situated in Tuppeh Seemah.*—(Continued.)										
	West.—A demarcated line running north from the Chouput along the road until reaching the boundary between Pehlaputhul and Chancho mouzahs; then for a short distance east until reaching the boundary of the Gotag and Chancho mouzahs; then north along the boundary between Gotag and Chancho mouzahs.	....	.....	.....	...	...	...	Mahwa ...	417	259	484
								Paras ...	.....	.....	.....
								Persar ...	968	211	181
								Sakwa ...	44,936	3,144	1,965
								Seeda ...	426	30	.....
								Dowta ...	11,186	1,814	151
								Then ...	5,865	422	.....
								Sissu ...	121	.....	.....
								Total ...	60,870	8,054	3,173
Acres 698; square miles 1·09.	**Block 11**, *situated in Tuppeh Seemah.*										
	North and East.—The boundary between Seemah and Munkheree tuppehs. *South.*—The boundary between Oreeya and Bulbul mouzahs; then along the boundary between Oreeya and Surjoo mouzahs. *West.*—A demarcated line running from the boundary of Oreeya and Sonwar mouzahs north-east until reaching the boundary between Seemah and Munkheree tuppehs.	Of little value except for the enormous quantities of bamboos.	Surjoo road	None ...	None	19·5	2·80	Asan ...	426	36	.....
								Gamhar ...	36	107	.....
								Garso ...	286	179	72
								Ginyan ...	143	36	36
								Jamun ...	.....	.....	.....
								Jamti ...	36	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	72	36	.....
								Khair ...	107	36	.....
								Kumbi ...	107	.....	.....
								Kusum ...	789	322	214
								Mahwa ...	.....	.....	.....
								Paras ...	.....	.....	.....
								Persar ...	1,214	642	179
								Sakwa ...	1,361	.....	.....
								Seeda ...	1,253	322	179
								Dowta ...	36	72	.....
								Then ...	2,931	251	.....
								Sissu ...	2,219	72	.....
								Total ...	11,016	2,111	680
Acres 1,523; square miles 2·38.	**Block 12**, *situated in Tuppeh Seemah.*										
	North.—The Jorhur nuddy ... ... *East.*—The boundary between Seemah and Munkheree. *South.*—The Mahrapanee nuddy; then along the boundary between the Peree and Jaipoor mouzahs. *West.*—A demarcated line running first north-east, then north from the boundary of the Peree and Jaipoor mouzahs to the Jorhur nuddy.	Consists almost entirely of young *sál*; poor in bamboos.	New cart road.	None ...	None	35	2·3	Asan ...	13,268	1,081	395
								Gamhar ...	45	259	45
								Garso ...	.....	.....	.....
								Ginyan ...	304	45	.....
								Jamun ...	304	274	45
								Jamti ...	1,387	1,589	1,614
								Khaua ...	.....	.....	.....
								Karam ...	91	213	274
								Khair ...	182	.....	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	395	137	91
								Mahwa ...	5,436	2,482	472
								Paras ...	.....	.....	.....
								Persar ...	4,127	700	609
								Sakwa ...	92,294	1,432	304
								Seeda ...	7,097	472	.....
								Dowta ...	1,660	2,894	259
								Then ...	12,016	218	45
								Sissu ...	.....	.....	.....
								Total ...	138,603	11,776	4,153
Acres 930; square miles 1·45.	**Block 13**, *situated in Tuppeh Seemah.*										
	North.—The Dhurchuree nuddy until reaching the boundary of the Koorwatolah and Doorum mouzahs. *East.*—The boundary between Koorwatolah and Doorum mouzahs. *West.*—The Kool river.	Contents principally young *sál*; few mature trees seen anywhere in block: poor in bamboos.	The Kool river.	None ...	None	26	2·30	Asan ...	6,761	286	215
								Gamhar ...	72	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	1,358	72	36
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	72	.....	.....
								Khair ...	7,366	72	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	465	394	107
								Mahwa ...	72	286	144
								Paras ...	107	179	.....
								Persar ...	716	251	286
								Sakwa ...	37,088	465	107
								Seeda ...	9,830	144	36
								Dowta ...	16,526	153	215
								Then ...	236	36	.....
								Sissu ...	539	72	.....
								Total ...	81,208	2,410	1,146

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
60	30	.....	...	...	...	...	...	1,250	4·60	0·29	0·53	0·07	0·03	.....	.....	.....	.....	.....	.....	5·52
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	1,360	1·07	0·23	0·20	.....	.....	.....	.....	.....	.....	.....	.....	1·50
756	151	.....	...	...	...	...	...	50,952	40·57	3·47	2·17	0·83	0·16	.....	.....	.....	.....	.....	.....	56·20
.....	.....	.....	...	...	...	...	...	456	4·70	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	4·73
.....	.....	.....	...	...	...	...	...	13,151	12·33	2·00	0·16	.....	.....	.....	.....	.....	.....	.....	.....	14·49
.....	.....	.....	...	...	...	...	...	6,287	6·47	0·47	.....	.....	.....	.....	.....	.....	.....	.....	.....	6·94
.....	.....	.....	...	...	...	...	...	121	0·13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·13
966	181	.....	...	...	...	...	...	73,244	86·54	8·88	3·49	1·06	0·19	.....	.....	.....	.....	.....	.....	100·16
.....	.....	.....	...	...	...	...	...	462	0·61	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·66
.....	.....	.....	...	...	...	...	...	143	0·05	0·15	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·20
.....	.....	.....	...	...	...	...	...	537	0·41	0·25	0·10	.....	.....	.....	.....	.....	.....	.....	.....	0·76
30	36	.....	...	...	...	...	...	287	0·21	0·05	0·05	0·05	0·05	.....	.....	.....	.....	.....	.....	0·41
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	36	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·05
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	108	0·10	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·15
.....	.....	.....	...	...	...	...	...	143	0·15	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·20
.....	.....	.....	...	...	...	...	...	107	0·15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·15
107	36	.....	...	...	...	...	...	1,468	1·13	0·46	0·31	0·15	0·05	.....	.....	.....	.....	.....	.....	2·10
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
214	72	.....	...	...	...	...	...	2,321	1·74	0·92	0·26	0·31	0·10	.....	.....	.....	.....	.....	.....	3·33
.....	.....	.....	...	...	...	...	...	1,361	1·95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1·95
.....	.....	.....	...	...	...	...	...	1,754	1·80	0·45	0·27	.....	.....	.....	.....	.....	.....	.....	.....	2·53
.....	.....	.....	...	...	...	...	...	108	0·05	0·10	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·15
.....	.....	.....	...	...	...	...	...	3,182	4·30	0·36	.....	.....	.....	.....	.....	.....	.....	.....	.....	4·56
107	.....	.....	...	...	...	...	...	2,308	3·18	0·10	.....	0·15	.....	.....	.....	.....	.....	.....	.....	3·43
464	144	.....	...	...	...	...	...	14,415	15·78	3·00	0·99	0·66	0·20	.....	.....	.....	.....	.....	.....	20·63
137	.....	.....	...	...	...	...	...	14,878	8·71	0·71	0·26	0·09	.....	.....	.....	.....	.....	.....	.....	9·77
.....	.....	.....	...	...	...	...	...	349	0·03	0·17	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·23
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
182	.....	.....	...	...	...	...	...	531	0·20	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·35
.....	.....	.....	...	...	...	...	...	623	0·20	0·18	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·41
213	45	.....	...	...	...	...	...	4,828	0·91	1·03	1·06	0·14	0·03	.....	.....	.....	.....	.....	.....	3·17
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45	.....	.....	...	...	...	...	...	623	0·06	0·14	0·18	0·03	.....	.....	.....	.....	.....	.....	.....	0·41
.....	.....	.....	...	...	...	...	...	182	0·12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·12
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	91	.....	...	...	...	...	...	714	0·26	0·09	0·06	.....	0·06	.....	.....	.....	.....	.....	.....	0·47
137	.....	.....	...	...	...	...	...	8,527	3·51	1·63	0·31	0·09	.....	.....	.....	.....	.....	.....	.....	5·54
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
350	.....	.....	...	...	...	...	...	5,786	2·71	0·46	0·40	0·23	.....	.....	.....	.....	.....	.....	.....	3·80
259	182	.....	...	...	...	...	...	94,471	60·60	0·94	0·29	0·17	0·12	.....	.....	.....	.....	.....	.....	62·03
.....	.....	.....	...	...	...	...	...	7,569	4·66	0·31	.....	.....	.....	.....	.....	.....	.....	.....	.....	4·97
.....	.....	.....	...	...	...	...	...	4,813	1·09	1·90	0·17	.....	.....	.....	.....	.....	.....	.....	.....	3·16
.....	.....	.....	...	...	...	...	...	12,279	7·89	0·80	0·03	.....	.....	.....	.....	.....	.....	.....	.....	8·72
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,323	318	.....	...	...	...	...	...	156,173	90·95	8·39	2·73	0·87	0·21	.....	.....	.....	.....	.....	.....	103·15
72	.....	.....	...	...	...	...	...	7,334	7·27	0·31	0·23	0·08	.....	.....	.....	.....	.....	.....	.....	7·89
.....	.....	.....	...	...	...	...	...	72	0·08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·08
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
72	.....	.....	...	...	...	...	...	1,538	1·46	0·06	0·04	0·08	.....	.....	.....	.....	.....	.....	.....	1·66
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	72	0·08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·08
36	.....	.....	...	...	...	...	...	7,474	7·92	0·08	.....	0·04	.....	.....	.....	.....	.....	.....	.....	8·04
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	966	0·50	0·42	0·12	.....	.....	.....	.....	.....	.....	.....	.....	1·04
36	.....	.....	...	...	...	...	...	538	0·08	0·31	0·15	0·04	.....	.....	.....	.....	.....	.....	.....	0·58
.....	.....	.....	...	...	...	...	...	288	0·12	0·19	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·31
72	.....	.....	...	...	...	...	...	1,325	0·77	0·27	0·31	0·08	.....	.....	.....	.....	.....	.....	.....	1·43
36	.....	.....	...	...	...	...	...	37,696	40·00	0·50	0·12	0·04	.....	.....	.....	.....	.....	.....	.....	40·66
.....	.....	.....	...	...	...	...	...	10,010	10·57	0·15	0·04	.....	.....	.....	.....	.....	.....	.....	.....	10·76
36	.....	.....	...	...	...	...	...	16,930	17·77	1·65	0·23	0·04	.....	.....	.....	.....	.....	.....	.....	19·69
.....	.....	.....	...	...	...	...	...	272	2·54	0·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	2·58
36	.....	.....	...	...	...	...	...	647	0·58	0·08	.....	0·04	.....	.....	.....	.....	.....	.....	.....	0·70
396	.....	.....	...	...	...	...	...	85,160	89·74	4·08	1·24	0·44	.....	.....	.....	.....	.....	.....	.....	95·50

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of trees.	Under one cubit.	1 & 2	2 & 3
Acres 1,008; square miles 1·58.	**Block 14**, *situated in Tuppeh Seemah.*					Acres.					
	North.—The boundary between Seemah and Baree tuppehs. *East and South.*—A demarcated line running from the Seemah-Baree boundary to the boundary of the Khoremoree and Kautokona mouzahs. *West.*—The boundary between the Khoremoree and Kautokona mouzahs.	Contents chiefly *sál* and *dowta*, some of the latter of good size. *Then* and *mowah* also pretty frequently seen; moderately rich in bamboos.	The Koel river.	A few scattered houses.	15	27	2·67	Asan ...	2,236	716	112
								Gamhar ...	1,532	1,006	187
								Garso ...	.....	37	.....
								Ginyan ...	2,464	484	37
								Jamun ...	.....	.....	75
								Jamti ...	261	373	261
								Khaua ...	.....	.....	.....
								Karam ...	150	224	150
								Khair ...	.....	.....	.....
								Kumbi ...	37	75	.....
								Kusum ...	1,159	224	224
								Mahwa ...	3,403	1,986	968
								Paras ...	.....	.....	.....
								Persar ...	1,572	784	823
								Sakwa ...	27,851	224	224
								Seeda ...	5,231	336	.....
								Dowta ...	22,700	5,634	600
								Then ...	7,348	1,200	150
								Sissu ...	37	37	.....
								Total ...	76,146	13,342	3,811
Acres 1,263; square miles 1·98.	**Block 15**, *situated in Tuppeh Seemah.*										
	North.—The boundary between the Hurraroo and Kautokona mouzahs. *East.*—A small demarcated stream running south from the Seemah-Baree boundary to the Koel. *South.*—The Koel river. *West.*—The boundary between Seemah and Khamee tuppehs.	Rich in *sál*, *dowta*, *mahwa asan*, and *jamti*; poor in bamboos.	The Koel river.	Kautokona	20	15·5	1·22	Asan ...	7,906	1,793	652
								Gamhar ...	245	226	.....
								Garso ...	.....	.....	.....
								Ginyan ...	570	81	163
								Jamun ...	.....	.....	.....
								Jamti ...	3,259	2,445	1,377
								Khaua ...	.....	.....	.....
								Karam ...	163	81	163
								Khair ...	4,395	.....	.....
								Kumbi ...	81	163	.....
								Kusum ...	407	407	163
								Mahwa ...	2,608	1,956	735
								Paras ...	1,377	490	81
								Persar ...	490	652	245
								Sakwa ...	60,460	735	490
								Seeda ...	4,889	163	.....
								Dowta ...	19,804	4,648	890
								Then ...	8,323	814	81
								Sissu ...	.....	.....	.....
								Total ...	114,977	14,654	5,046
Acres 855; square miles 1·34.	**Block 16**, *situated in Tuppeh Seemah.*										
	North.—The boundary between the Chatum and Baroo mouzahs. *East.*—The boundary between the Chatum and Kookoo mouzahs. *South.*—A demarcated line running first south; then south-west from the boundary between the Chatum and Kookoo mouzahs, until reaching the boundary of the Chatum and Gunneshpore mouzahs. *West.*—The boundary between Chatum and Kutteeyah mouzahs.	Contains principally *sál*, little of which, however, is of any size; moderately rich in bamboos.	New cart road	None ...	None	26·5	3·10	Asan ...	2,710	516	387
								Gamhar ...	93	93	.....
								Garso ...	.....	.....	.....
								Ginyan ...	62	.....	.....
								Jamun ...	.....	.....	.....
								Jamti ...	355	516	258
								Khaua ...	.....	.....	.....
								Karam ...	31	93	.....
								Khair ...	6,386	31	.....
								Kumbi ...	31	.....	.....
								Kusum ...	31	226	93
								Mahwa ...	3,582	1,223	567
								Paras ...	31	31	.....
								Persar ...	189	322	258
								Sakwa ...	31,652	419	129
								Seeda ...	3,283	355	62
								Dowta ...	7,712	2,163	226
								Then ...	3,104	616	31
								Sissu ...	.....	.....	.....
								Total ...	59,252	6,004	2,011
Acres 2,845; square miles 4·44.	**Block 17**, *situated in Tuppeh Khamee.*										
	North.—The Burmahee nuddy; then a demarcated line until reaching the nuddy forming the boundary between the Hurhee and Purroh mouzahs. *East.*—The river forming the boundary between the Hurhee and Purroh mouzahs. *South.*—The Koel river.	The upper portion of the block contains some good timber, principally *dowta* and *asan*; *sal* is found all through it; the lower portion near the river consists principally of *sál*, none of which is of any size; moderately rich in bamboos.	The Koel river.	None ...	None	·57	2·00	Asan ...	23,756	4,267	939
								Gamhar ...	100	199	.....
								Garso ...	.....	.....	.....
								Ginyan ...	2,702	597	427
								Jamun ...	142	.....	.....
								Jamti ...	1,053	1,194	711
								Khaua ...	.....	.....	.....
								Karam ...	995	455	100
								Khair ...	11,892	398	.....

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 13	Total.	Total amount of material per acre. Under one exhibit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
75	37	...	...	...	...	...	...	3,176	2·22	0·71	0·11	0·07	0·04	...	...	...	...	...	...	3·15
37	...	...	...	...	...	...	...	2,764	1·52	1·00	0·19	0·04	...	...	...	...	...	...	...	2·75
...	...	...	...	...	...	...	...	37	...	0·04	...	...	...	...	...	...	...	...	...	0·04
...	...	...	...	...	...	...	...	2,985	2·44	0·48	0·04	...	...	...	...	...	...	...	...	2·96
...	37	...	...	...	...	...	...	112	...	...	0·07	...	0·04	...	...	...	...	...	...	0·11
...	...	...	...	...	...	...	...	895	0·26	0·37	0·26	...	...	...	...	...	...	...	...	0·89
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	37	...	...	...	...	...	...	561	0·15	0·22	0·15	...	0·04	...	...	...	...	...	...	0·56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	112	0·04	0·07	...	...	...	...	...	...	...	...	...	0·11
75	...	...	...	...	...	...	...	1,682	1·15	0·22	0·22	0·07	...	...	...	...	...	...	...	1·66
150	75	...	...	...	...	...	...	6,647	3·44	1·97	0·96	0·15	0·07	...	...	...	...	...	...	6·59
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
448	75	...	...	...	...	...	...	3,702	1·56	0·78	0·81	0·44	0·07	...	...	...	...	...	...	3·60
...	...	...	...	...	...	...	...	28,299	27·68	0·22	0·22	...	...	...	...	...	...	...	...	28·07
...	...	...	...	...	...	...	...	5,567	5·19	0·33	...	...	...	...	...	...	...	...	...	5·52
75	...	...	...	...	...	...	...	29,009	22·52	5·59	0·59	0·07	...	...	...	...	...	...	...	28·77
75	37	...	...	...	...	...	...	8,810	7·29	1·18	0·15	0·07	0·04	...	...	...	...	...	...	8·73
...	...	...	...	...	...	...	...	74	0·04	0·04	...	...	...	...	...	...	...	...	...	0·08
935	298	...	...	...	...	...	...	94,532	75·45	13·22	3·77	0·91	0·30	...	...	...	...	...	...	93·65
163	...	...	...	...	...	...	...	10,514	6·26	0·52	0·13	...	...	...	...	...	...	...	...	8·33
...	...	...	...	...	...	...	...	471	0·19	0·26	...	...	...	...	...	...	...	...	...	0·45
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
163	...	...	...	...	...	...	...	977	0·45	0·06	0·13	0·13	...	...	...	...	...	...	...	0·77
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
896	...	...	...	...	...	...	...	7,977	2·58	1·94	1·09	0·71	...	...	...	...	...	...	...	6·32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	407	0·13	0·06	0·13	...	...	...	...	...	...	...	...	0·32
...	...	...	...	...	...	...	...	4,395	3·48	...	...	...	...	...	...	...	...	...	...	3·48
...	...	...	...	...	...	...	...	244	0·06	0·13	...	...	...	...	...	...	...	...	...	0·19
81	81	...	...	...	...	...	...	1,139	0·32	0·32	0·13	0·06	0·06	...	...	...	...	...	...	0·89
81	81	...	...	...	...	...	...	5,461	2·06	1·55	0·58	0·06	0·06	...	...	...	...	...	...	4·31
...	...	...	...	...	...	...	...	1,948	1·09	0·39	0·06	...	...	...	...	...	...	...	...	1·54
163	...	...	...	...	...	...	...	1,550	0·39	0·52	0·19	0·13	...	...	...	...	...	...	...	1·23
407	163	...	...	...	...	...	...	62,255	47·87	0·58	0·39	0·32	0·13	...	...	...	...	...	...	49·29
...	...	...	...	...	...	...	...	5,052	3·87	0·13	...	...	...	...	...	...	...	...	...	4·00
...	...	...	...	...	...	...	...	25,348	15·68	3·68	0·71	...	...	...	...	...	...	...	...	20·07
163	...	...	...	...	...	...	...	9,881	6·59	0·64	0·06	0·13	...	...	...	...	...	...	...	7·42
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,117	325	...	...	...	...	...	...	137,119	91·02	11·68	3·99	1·67	0·25	...	...	...	...	...	...	108·61
31	31	...	...	...	...	...	...	3,675	3·17	0·60	0·45	0·04	0·04	...	...	...	...	...	...	4·30
...	...	...	...	...	...	...	...	186	0·11	0·11	...	...	...	...	...	...	...	...	...	0·22
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	62	0·08	...	...	...	...	...	...	...	...	...	...	0·08
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
120	62	...	...	...	...	...	...	1,320	0·42	0·60	0·30	0·18	0·08	...	...	...	...	...	...	1·55
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	124	0·04	0·11	...	...	...	...	...	...	...	...	...	0·15
...	...	...	...	...	...	...	...	6,417	7·47	0·04	...	...	...	...	...	...	...	...	...	7·51
...	...	...	...	...	...	...	...	31	0·04	...	...	...	...	...	...	...	...	...	...	0·04
31	...	...	...	...	...	...	...	381	0·04	0·26	0·11	0·04	...	...	...	...	...	...	...	0·45
189	161	...	...	...	...	...	...	5,722	4·19	1·43	1·02	0·54	0·19	...	...	...	...	...	...	7·17
...	...	...	...	...	...	...	...	62	0·04	0·04	...	...	...	...	...	...	...	...	...	0·08
120	120	...	...	...	...	...	...	1,027	0·34	0·38	0·30	0·15	0·15	...	...	...	...	...	...	1·32
62	31	31	...	...	...	...	...	32,324	37·02	0·49	0·15	0·68	0·04	0·04	...	...	...	...	...	37·32
...	...	...	...	...	...	...	...	3,700	3·78	0·42	0·08	...	...	...	...	...	...	...	...	4·28
93	...	...	...	...	...	...	...	14,194	9·02	2·53	0·26	0·11	...	...	...	...	...	...	...	1·92
31	...	...	...	...	...	...	...	3,782	3·63	0·72	0·04	0·04	...	...	...	...	...	...	...	14·43
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
695	414	31	...	...	...	...	...	69,007	69·39	7·73	2·71	0·95	0·50	0·04	...	...	...	...	...	81·32
142	256	...	51	...	...	...	...	29,411	8·35	1·50	0·33	0·05	0·09	...	0·02	...	...	...	...	10·34
...	...	...	...	...	...	...	...	299	0·03	0·07	...	...	...	...	...	...	...	...	...	0·10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	5,723	0·95	0·21	0·04	...	...	...	...	...	...	...	...	1·20
...	...	...	...	...	...	...	...	142	0·05	...	...	...	...	...	...	...	...	...	...	0·05
190	51	...	...	...	...	...	...	3,208	0·37	0·42	0·25	0·07	0·02	...	...	...	...	...	...	1·13
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
190	...	...	...	...	...	...	...	1,749	0·35	0·16	0·04	0·07	...	...	...	...	...	...	...	0·62
...	...	...	...	...	...	...	...	12,290	4·18	0·14	...	...	...	...	...	...	...	...	...	4·32

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
Acres 2,845; square miles 4·44.	**Block 17**, *situated in Tuppeh Khamee.*—(Continued.) *West.*—The Goanjh nuddy to its junction with the Burmahee nuddy.	....	.....	.....	...	Acres. ...	...	Kumbi ...	.....	.....	.....
								Kusum ...	3,044	1,593	498
								Mahwa ...	740	498	199
								Paras ...	256	51	.....
								Persar ...	1,236	740	549
								Sakwa ...	101,282	2,248	284
								Seeda ...	24,353	996	.....
								Dowta ...	48,763	16,928	2,646
								Then ...	10,526	2,788	298
								Sissu ...	1,067	298	.....
								Total ...	231,900	33,250	6,651
Acres 2,570; square miles 4·01.	**Block 18**, *situated in Tuppeh Khamee.* *North.*—The boundary between Khamee and Doorjag tuppehs. *East.*—The boundary between the Gansedag and Lat mouzahs. *South.*—The Charo nuddy. *West.*—The boundary between the Bereh and Tunwaie mouzahs.	The upper portion near the Doorjag boundary contains some good timber, principally *dowta* and *asan*. The *sál* lies scattered all through it. The southern portion near the Charo nuddy contains little of any value, principally mutilated and frequently burnt *sál*; poor in bamboos.	The Charo nuddy, which flows into the Koel river.	None ...	None	·61	2·37	Asan ...	19,044	7,427	1,902
								Gamhar ...	234	256	.....
								Garso ...	.....	.....	.....
								Ginyan ...	1,645	591	41
								Jamun ...	.....	.....	.....
								Jamti ...	2,107	2,955	1,568
								Khaua ...	41	82	123
								Karam ...	668	858	.....
								Khair ...	9,740	429	214
								Kumbi ...	41	.....	.....
								Kusum ...	1,439	1,287	429
								Mahwa ...	4,292	3,881	2,596
								Paras ...	1,970	82	.....
								Persar ...	925	429	463
								Sakwa ...	144,151	3,958	768
								Seeda ...	13,621	430	123
								Dowta ...	47,776	12,876	1,151
								Then ...	15,960	4,343	463
								Sissu ...	41	.....	.....
								Total ...	263,704	39,884	9,821
Acres 2,004; square miles 3·13.	**Block 19**, *situated in Tuppeh Khamee.* *North.*—The boundary between Khamee and Doorjag tuppehs. *East.*—The boundary between the Meral and Tunwaie mouzahs. *South.*—The Charo nuddy to its junction with the Koel; then the Koel river. *West.*—A demarcated line running north from the Koel river to the Khamee-Doorjag boundary.	The northern and upper portion near the Doorjag boundary contains some fine good trees; the lower half consists of little else but burnt and mutilated *sál*, which extends to the river; *sál* found all through the block; poor in bamboos.	The Koel river.	None ...	None	60	2·99	Asan ...	26,854	2,806	567
								Gamhar ...	467	166	100
								Garso ...	.....	.....	.....
								Ginyan ...	836	100	.....
								Jamun ...	.....	.....	.....
								Jamti ...	1,663	541	270
								Khaua ...	100	34	.....
								Karam ...	333	400	34
								Khair ...	4,509	.....	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	1,036	367	166
								Mahwa ...	4,108	2,204	836
								Paras ...	2,972	601	34
								Persar ...	1,208	435	234
								Sakwa ...	99,799	2,204	468
								Seeda ...	10,421	270	.....
								Dowta ...	38,016	2,806	400
								Then ...	13,060	1,944	135
								Sissu ...	34	.....	.....
								Total ...	205,411	14,878	3,244
Acres 6,724; square miles 10·51.	**Block 20**, *situated in Tuppeh Doorjag.* *North.*—The boundary between Bareedohur and Ookamand mouzahs; then the boundary between the Hurnamand and Ookamand mouzahs; then the boundary between the Hurnamand and Cheepadohur mouzahs; then the boundary between Joroahur and Cheepadohur mouzahs; and then the boundary between the Doorjag and Baree tuppehs. *East.*—The Jeewa nuddy. *South.*—The Jeewa nuddy for a short distance; then a demarcated line running from the Jeewa nuddy west, until reaching the nuddy which flows north through Joroahur; then north along this nuddy to the junction with the Hurnamand nuddy; then along the latter, first west and then south-west, until after crossing the Hurnamand-Cheepadohur road; then a demarcated line running west until reaching the boundary of the Hurnamand and Joroahur mouzahs; then along the nuddy which flows west through Hurnamand mouzah until meeting the boundary of the Hurnamand and Bareedohur mouzahs, and continues along the same nuddy until reaching the boundary between the Bareedohur and Sairdope mouzahs. *West.*—The boundary between the Bareedohur and Ledgam mouzahs.	This large area is at present perfectly valueless, although the return of *sál* is high; it has all suffered tremendously; nothing has been spared, and there is hardly a single tree to be seen. The *sál* overruns the whole block: poor in bamboos all through.	Joroahur and Cheepadohur road.	Barecchutan Kananda (deserted).	25	137	2·03	Asan ...	102,070	8,136	1,571
								Gamhar ...	245	147	.....
								Garso ...	.....	.....	.....
								Ginyan ...	589	49	49
								Jamun ...	.....	49	.....
								Jamti ...	1,179	491	491
								Khaua ...	.....	.....	.....
								Karam ...	245	.....	.....
								Khair ...	181,682	1,904	294
								Kumbi ...	.....	.....	.....
								Kusum ...	245	49	49
								Mahwa ...	.....	98	49
								Paras ...	14,053	1,865	736
								Persar ...	2,454	49	294
								Sakwa ...	299,487	3,631	933
								Seeda ...	31,872	98	.....
								Dowta ...	29,144	1,029	441
								Then ...	27,367	834	98
								Sissu ...	.....	.....	.....
								Total ...	690,632	18,499	5,005

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of materials in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
142	142	...	...	...	...	...	...	5,419	1·07	0·56	0·17	0·05	0·05	...	...	...	...	...	...	1·90
199	...	...	...	...	...	...	...	1,636	0·26	0·17	0·07	0·07	...	...	...	...	...	...	...	0·57
...	...	...	...	...	...	...	...	507	0·09	0·02	...	...	...	...	...	...	...	...	...	0·11
398	142	...	...	...	...	...	...	3,067	0·44	0·26	0·19	0·14	0·05	...	...	...	...	...	...	1·08
256	100	...	...	...	...	...	...	104,170	35·60	0·79	0·10	0·09	0·04	...	...	...	...	...	...	36·62
...	...	...	...	...	...	...	...	25,349	8·56	0·35	...	...	...	...	...	...	...	...	...	8·91
356	...	...	...	...	...	...	...	68,693	17·14	5·95	0·03	0·12	...	...	...	...	...	...	...	24·14
...	...	...	...	...	...	...	...	13,612	3·70	0·98	0·10	...	...	...	...	...	...	...	...	4·78
...	...	...	...	...	...	...	...	1,365	0·37	0·10	...	...	...	...	...	...	...	...	...	0·47
1,891	691	...	51	...	...	...	...	274,443	81·51	11·68	2·22	0·66	0·25	...	0·02	...	...	...	...	96·34
668	128	...	...	...	...	...	...	29,169	7·41	2·89	0·74	0·26	0·05	...	...	...	...	...	...	11·35
...	...	...	...	...	...	...	...	490	0·13	0·10	...	...	...	...	...	...	...	...	...	0·23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	2,277	0·64	0·23	0·02	...	...	...	...	...	...	...	...	0·89
...	41	...	...	...	...	...	...	41	...	...	...	...	0·02	...	...	...	...	...	...	0·02
1,670	...	...	...	...	...	...	...	8,300	0·82	1·15	0·61	0·07	...	...	...	...	...	...	...	2·65
...	...	...	...	...	...	...	...	246	0·02	0·03	0·05	...	...	...	...	...	...	...	...	0·10
82	41	...	...	...	...	...	...	1,640	0·26	0·33	...	0·03	0·02	...	...	...	...	...	...	0·64
...	...	...	...	...	...	...	...	10,383	3·79	0·16	0·08	...	...	...	...	...	...	...	...	4·03
...	...	...	...	...	...	...	...	41	0·02	...	...	...	...	...	...	...	...	...	...	0·02
41	41	...	...	...	...	...	...	3,237	0·56	0·49	0·16	0·02	0·02	...	...	...	...	...	...	1·25
820	123	...	...	...	...	...	...	11,712	1·67	1·51	1·01	0·28	0·05	...	...	...	...	...	...	4·52
...	...	...	...	...	...	...	...	2,061	0·77	0·03	...	...	...	...	...	...	...	...	...	0·80
214	167	...	41	...	...	...	...	2,239	0·86	0·16	0·18	0·08	0·06	...	0·02	...	...	...	...	0·86
295	41	...	...	...	...	...	...	149,213	56·09	1·54	0·30	0·11	0·02	...	...	...	...	...	...	58·06
41	...	...	...	...	...	...	...	14,215	5·30	0·25	0·05	0·02	...	...	...	...	...	...	...	5·62
123	...	...	...	...	...	...	...	61,906	18·59	5·01	0·44	0·05	...	...	...	...	...	...	...	24·09
82	41	...	...	...	...	...	...	20,889	6·21	1·69	0·18	0·03	0·02	...	...	...	...	...	...	8·13
...	...	...	...	...	...	...	...	41	0·02	...	...	...	...	...	...	...	...	...	...	0·02
4,036	623	...	41	...	...	...	...	318,109	102·66	15·57	3·82	0·95	0·26	...	0·02	...	...	...	...	123·28
100	34	...	...	...	...	...	...	30,361	13·45	1·40	0·28	0·05	0·02	...	...	...	...	...	...	15·20
34	...	...	...	...	...	...	...	767	0·23	0·08	0·05	0·02	...	...	...	...	...	...	...	0·38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	936	0·42	0·05	...	...	...	...	...	...	...	...	...	0·47
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
135	34	...	...	...	...	...	...	2,643	0·83	0·27	0·13	0·07	0·02	...	...	...	...	...	...	1·32
...	...	...	...	...	...	...	...	134	0·05	0·02	...	...	...	...	...	...	...	...	...	0·07
...	...	...	...	...	...	...	...	767	0·17	0·20	0·02	...	...	...	...	...	...	...	...	0·39
...	...	...	...	...	...	...	...	4,509	2·25	...	...	...	...	...	...	...	...	...	...	2·25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	...	...	...	...	...	...	...	1,603	0·53	0·18	0·08	0·02	...	...	...	...	...	...	...	0·80
435	60	...	...	...	...	...	...	7,649	2·05	1·10	0·42	0·22	0·03	...	...	...	...	...	...	3·82
34	...	...	...	...	...	...	...	3,641	1·48	0·30	0·02	0·02	...	...	...	...	...	...	...	1·82
135	100	...	...	...	...	...	...	2,107	0·65	0·22	0·12	0·07	0·05	...	...	...	...	...	...	1·11
66	34	...	...	...	...	...	...	102,571	40·80	1·10	0·23	0·03	0·02	...	...	...	...	...	...	51·18
...	...	...	...	...	...	...	...	10,691	5·20	0·13	...	...	...	...	...	...	...	...	...	5·33
...	...	...	...	...	...	...	...	41,222	18·97	1·40	0·20	...	...	...	...	...	...	...	...	20·57
...	...	...	...	...	...	...	...	15,139	6·52	0·97	0·07	...	...	...	...	...	...	...	...	7·56
...	...	...	...	...	...	...	...	34	0·02	...	...	...	...	...	...	...	...	...	...	0·02
973	268	...	...	...	...	...	...	224,774	102·61	7·42	1·62	0·50	0·14	...	...	...	...	...	...	112·29
1,227	393	49	...	...	...	...	...	113,446	15·18	1·21	0·23	0·18	0·06	0·007	...	...	...	...	...	16·867
...	...	...	...	...	...	...	...	392	0·04	0·02	...	...	...	...	...	...	...	...	...	0·06
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
98	49	...	...	...	...	...	...	834	0·09	0·007	0·007	0·01	0·007	...	...	...	...	...	...	0·121
...	...	...	...	...	...	...	...	49	...	0·007	...	...	...	...	...	...	...	...	...	0·007
197	98	...	...	...	...	...	...	2,458	0·18	0·07	0·07	0·03	0·01	...	...	...	...	...	...	0·36
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	245	0·04	...	...	...	...	...	...	...	...	...	...	0·04
...	...	...	...	...	...	...	...	183,940	27·02	0·29	0·04	...	...	...	...	...	...	...	...	27·35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
98	49	...	...	...	...	...	...	490	0·04	0·007	0·007	0·01	0·007	...	...	...	...	...	...	0·071
98	...	...	...	...	...	...	...	245	...	0·01	0·007	0·01	...	...	...	...	...	...	...	0·027
98	...	...	...	...	...	...	...	16,752	2·09	0·28	0·11	0·01	...	...	...	...	...	...	...	2·49
441	98	...	...	...	...	...	...	3,336	0·37	0·007	0·04	0·07	0·01	...	...	...	...	...	...	0·497
393	...	...	...	...	...	...	...	304,444	44·54	0·54	0·14	0·06	...	...	...	...	...	...	...	45·28
...	...	...	...	...	...	...	...	31,970	4·74	0·01	...	...	...	...	...	...	...	...	...	4·75
147	...	...	...	...	...	...	...	30,761	4·26	0·15	0·07	0·02	...	...	...	...	...	...	...	4·50
...	...	...	...	...	...	...	...	28,299	4·07	0·12	0·01	...	...	...	...	...	...	...	...	4·20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,707	687	49	...	...	...	...	...	717,659	102·66	2·728	0·731	0·40	0·094	0·007	...	...	...	...	...	106·630

Detailed Account of the Reserved State

Area in block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of trees.	Under one cubit.	1 & 2	2 & 3
	Block 21, *situated in Tuppeh Doorjag.*					Acres.					
Acres 3,674; square miles 5·74.	*North.*—The Dauree nuddy ... ... *East.*—The boundary between Jurgudh and Saidope mouzahs; then east along a demarcated nuddy until reaching the boundary of the Saidope and Bareedohur mouzahs; then runs again south along the boundary between the Saidope and Bareedohur mouzahs, until reaching the Doorjag-Khamee boundary. *South.*—The boundary between the Doorjag and Khamee tuppehs. *West.*—The boundary between the Jurgudh and Morwaie Kullan mouzahs.	The northern portion is of very little value, consisting principally of *khair* scrub; getting south the *khair* nearly almost disappears and the *sál* predominates; the immediate south and that part of the block lying in the Saidope mouzah contains some good *dowta, then, persar, asan*, and some *mahwa*; poor in bamboos in the northern portion, and moderately rich in the southern.	Dauree nuddy	None ...	None	76	2·07	Asan ...	25,865	3,908	1,063
								Gamhar ...	97	97	242
								Garso ...	.....	.....	.....
								Ginyan ...	242	97	145
								Jamun ...	.....	.....	47
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	97	145	145
								Khair ...	47,015	2,755	97
								Kumbi ...	.....	.....	.....
								Kusum ...	776	531	290
								Mahwa ...	2,756	1,210	1,552
								Paras ...	5,751	1,257	194
								Persar ...	1,306	676	870
								Sakwa ...	166,101	3,674	485
								Seeda ...	19,582	1,593	194
								Dowta ...	22,301	1,593	676
								Then ...	20,207	4,886	1,210
								Sissu ...	.....	.....	.....
								Total ...	312,766	22,422	7,201
	Block 22, *situated in Tuppeh Doorjag.*										
Acres 582; square miles 0·91.	*North.*—The Koel river ... ... *East.*—The boundary between Pootoagur and Choecha mouzahs; then the boundary between Pootoagur and Horeelong. *South.*—The boundary between Pootoagur and Sindhorwa mouzahs. *West.*—The Koel river.	The western and southern portion is fairly stocked with young *sál*, but contains few trees of any dimensions; also some few *mahwa*, a large quantity of *then*, but all small and crippled; also some few good *asan, persar*, and *karam*: poor in bamboos."	The Koel river.	None ...	None	21	3·6	Asan ...	3,242	640	252
								Gamhar ...	55	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	111	.....	.....
								Jamun ...	.....	111	55
								Jamti ...	111	28	.....
								Khaua ...	.....	.....	.....
								Karam ...	84	28	55
								Khair ...	9,312	252	28
								Kumbi ...	.....	.....	.....
								Kusum ...	28	28	.....
								Mahwa ...	196	111	111
								Paras ...	1,135	168	28
								Persar ...	139	222	139
								Sakwa ...	19,677	1,967	914
								Seeda ...	3,411	84	.....
								Dowta ...	3,323	336	168
								Then ...	5,570	361	55
								Sissu ...	.....	.....	.....
								Total ...	46,394	4,336	1,805
	Block 23, *situated in Tuppeh Doorjag.*										
Acres 1,343; square miles 2·10.	*North.*—The boundary between Khoord Morwaie and Chootroosagur mouzahs. *East.*—The boundary between Khoord Morwaie and Morwaie Kullan; then west along a small nuddy forming boundary between block and parent village of Morwaie Khoord; then south to the Hetlee Morwaie boundary. *South.*—The boundary between Khoord Morwaie and Hetlee Morwaie. *West.*—The boundary between Khoord Morwaie and Sindhorwa mouzahs.	Although the *sál* is scattered pretty well over the whole area in patches, still it is of little value, owing to its having been tapped, and there is none of any dimensions; poor in bamboos.	The Koel river.	Auratika ...	20	47	3·5	Asan ...	11,778	4,083	400
								Gamhar ...	29	114	29
								Garso ...	.....	.....	.....
								Ginyan ...	.....	.....	.....
								Jamun ...	143	29	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	.....	.....	.....
								Khair ...	23,790	86	.....
								Kumbi ...	29	.....	.....
								Kusum ...	.....	.....	29
								Mahwa ...	1,343	314	200
								Paras ...	.....	.....	.....
								Persar ...	343	685	832
								Sakwa ...	20,210	3,035	1,088
								Seeda ...	5,117	114	.....
								Dowta ...	8,917	1,061	376
								Then ...	7,091	1,168	29
								Sissu ...	.....	.....	.....
								Total ...	87,790	10,689	2,983
	Block 24, *situated in Tuppeh Doorjag.*										
Acres 661; square miles 1·03.	*North and East.*—The boundary between the Doorjag and Baree tuppehs. *South.*—The boundary between the Moondoh and Kocheelah mouzahs. *West.*—A demarcated line running north from the boundary between Moondoh and Kocheelah to the boundary of the Doorjag and Baree tuppehs.	Contains no *sál* and few trees of any value; poor in bamboos.	Moondoh road to the Koel river.	None ...	None	18	2·72	Asan ...	440	146	109
								Gamhar ...	146	.....	36
								Garso ...	.....	.....	.....
								Ginyan ...	1,580	146	220
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	476	220	109
								Khair ...	28,680	1,210	109
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	.....	73
								Mahwa ...	.....	.....	.....
								Paras ...	440	258	183
								Persar ...	.....	73	.....
								Sakwa ...	.....	.....	.....
								Seeda ...	5,215	73	.....
								Dowta ...	4,067	258	73
								Then ...	1,064	73	73
								Sissu ...	.....	.....	.....
								Total ...	42,708	2,457	985

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of materials per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
628	145	.....	...	...	...	...	...	31,609	7·04	1·06	0·29	0·17	0·04	.....	.....	.....	.....	.....	.....	8·60
.....	.....	.....	...	...	...	...	...	436	0·03	0·03	0·07	.....	.....	.....	.....	.....	.....	.....	.....	0·13
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
07	.....	.....	...	...	...	...	...	581	0·07	0·03	0·04	0·03	.....	.....	.....	.....	.....	.....	.....	0·17
.....	.....	.....	...	...	...	...	...	47	.....	.....	0·01	.....	.....	.....	.....	.....	.....	.....	.....	0·01
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
97	.....	.....	...	...	...	...	...	484	0·03	0·04	0·04	0·03	.....	.....	.....	.....	.....	.....	.....	0·14
.....	.....	.....	...	...	...	...	...	50,467	12·90	0·75	0·03	.....	.....	.....	.....	.....	.....	.....	.....	13·74
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
145	97	.....	...	...	...	...	...	1,839	0·21	0·14	0·08	0·04	0·03	.....	.....	.....	.....	.....	.....	0·50
776	242	.....	...	...	...	...	...	6,536	0·51	0·33	0·42	0·21	0·07	.....	.....	.....	.....	.....	.....	1·54
.....	.....	.....	...	...	...	...	...	7,182	1·56	0·34	0·05	.....	.....	.....	.....	.....	.....	.....	.....	1·95
725	194	.....	...	...	...	...	...	3,861	0·38	1·18	0·24	0·20	0·05	.....	.....	.....	.....	.....	.....	1·05
97	47	.....	...	...	...	...	...	170,404	45·21	1·00	0·13	0·03	0·01	.....	.....	.....	.....	.....	.....	46·38
.....	.....	.....	...	...	...	...	...	21,309	5·33	0·43	0·05	.....	.....	.....	.....	.....	.....	.....	.....	5·81
338	145	.....	...	...	...	...	...	25,053	6·07	0·43	0·18	0·09	0·04	.....	.....	.....	.....	.....	.....	6·81
194	47	.....	...	...	...	...	...	26,544	5·50	1·33	0·33	0·05	0·01	.....	.....	.....	.....	.....	.....	7·22
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3,097	917	.....	...	...	...	...	...	346,412	84·90	6·09	1·96	0·85	0·25	.....	.....	.....	.....	.....	.....	94·05
55	.....	.....	...	...	...	...	...	4,189	5·57	1·10	0·43	0·10	.....	.....	.....	.....	.....	.....	.....	7·20
.....	.....	.....	...	...	...	...	...	55	0·10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·10
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	111	0·19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·19
28	.....	.....	...	...	...	...	...	194	.....	0·19	0·10	0·05	.....	.....	.....	.....	.....	.....	.....	0·34
.....	.....	.....	...	...	...	...	...	139	0·19	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·24
28	.....	.....	...	...	...	...	...	28	.....	.....	.....	0·05	.....	.....	.....	.....	.....	.....	.....	0·05
55	28	.....	...	...	...	...	...	250	0·14	0·05	0·10	0·10	0·05	.....	.....	.....	.....	.....	.....	0·44
.....	.....	.....	...	...	...	...	...	9,592	16·00	0·43	0·05	.....	.....	.....	.....	.....	.....	.....	.....	16·48
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
55	.....	.....	...	...	...	...	...	111	0·05	0·05	.....	0·10	.....	.....	.....	.....	.....	.....	.....	0·20
84	.....	84	...	...	...	...	...	586	0·33	0·19	0·19	0·14	.....	0·14	.....	.....	.....	.....	.....	0·99
.....	.....	.....	...	...	...	...	...	1,331	1·95	0·29	0·05	.....	.....	.....	.....	.....	.....	.....	.....	2·29
111	.....	.....	...	...	...	...	...	611	0·24	0·36	0·24	0·19	.....	.....	.....	.....	.....	.....	.....	1·03
504	.....	.....	...	...	...	...	...	23,062	33·81	3·38	1·57	0·86	.....	.....	.....	.....	.....	.....	.....	39·62
.....	.....	.....	...	...	...	...	...	3,495	5·86	0·14	.....	.....	.....	.....	.....	.....	.....	.....	.....	6·00
.....	.....	.....	...	...	...	...	...	3,827	5·71	0·57	0·29	.....	.....	.....	.....	.....	.....	.....	.....	6·57
.....	.....	.....	...	...	...	...	...	5,986	9·57	0·62	0·10	.....	.....	.....	.....	.....	.....	.....	.....	10·29
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
920	28	84	...	...	...	...	...	53,567	79·71	7·42	3·12	1·59	0·05	0·14	.....	.....	.....	.....	.....	92·03
.....	.....	.....	...	...	...	...	...	16,261	8·77	3·04	0·30	.....	.....	.....	.....	.....	.....	.....	.....	12·11
.....	.....	.....	...	...	...	...	...	172	0·02	0·09	0·02	.....	.....	.....	.....	.....	.....	.....	.....	0·13
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	172	0·11	0·02	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·13
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	23,876	17·64	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	17·70
.....	.....	.....	...	...	...	...	...	29	0·02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·02
.....	.....	.....	...	...	...	...	...	29	.....	.....	0·02	.....	.....	.....	.....	.....	.....	.....	.....	0·02
29	.....	.....	...	...	...	...	...	1,886	1·00	0·23	0·15	0·02	.....	.....	.....	.....	.....	.....	.....	1·40
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	.....	.....	...	...	...	...	...	1,889	0·26	0·51	0·62	0·04	.....	.....	.....	.....	.....	.....	.....	1·41
286	.....	.....	...	...	...	...	...	33,619	21·75	2·26	0·81	0·21	.....	.....	.....	.....	.....	.....	.....	25·03
.....	.....	.....	...	...	...	...	...	5,231	3·31	0·09	.....	.....	.....	.....	.....	.....	.....	.....	.....	3·40
.....	.....	.....	...	...	...	...	...	10,354	6·44	0·79	0·28	.....	.....	.....	.....	.....	.....	.....	.....	7·71
.....	.....	.....	...	...	...	...	...	8,268	5·28	0·87	0·02	.....	.....	.....	.....	.....	.....	.....	.....	6·17
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
344	.....	.....	...	...	...	...	...	101,806	65·30	7·96	2·22	0·25	.....	.....	.....	.....	.....	.....	.....	75·73
36	.....	.....	...	...	...	...	...	731	0·67	0·22	0·17	0·06	.....	.....	.....	.....	.....	.....	.....	1·12
.....	.....	.....	...	...	...	...	...	182	0·22	.....	0·06	.....	.....	.....	.....	.....	.....	.....	.....	0·28
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
73	.....	.....	...	...	...	...	...	2,019	2·39	0·22	0·33	0·11	.....	.....	.....	.....	.....	.....	.....	3·05
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	805	0·72	0·33	0·17	.....	.....	.....	.....	.....	.....	.....	.....	1·22
36	.....	.....	...	...	...	...	...	30,035	42·39	1·83	0·17	0·06	.....	.....	.....	.....	.....	.....	.....	44·45
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	73	.....	...	...	...	...	...	146	.....	.....	0·11	.....	0·11	.....	.....	.....	.....	.....	.....	0·22
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	.....	.....	...	...	...	...	...	917	0·67	0·39	0·29	0·06	.....	.....	.....	.....	.....	.....	.....	1·41
.....	36	.....	...	...	...	...	...	109	.....	0·11	.....	.....	0·06	.....	.....	.....	.....	.....	.....	0·17
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	5,288	7·89	0·11	.....	.....	.....	.....	.....	.....	.....	.....	.....	8·00
.....	.....	.....	...	...	...	...	...	4,998	7·06	0·39	0·11	.....	.....	.....	.....	.....	.....	.....	.....	7·56
.....	.....	.....	...	...	...	...	...	1,210	1·61	0·11	0·11	.....	.....	.....	.....	.....	.....	.....	.....	1·83
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
181	109	.....	...	...	...	...	...	46,440	63·62	3·71	1·52	0·29	0·17	.....	.....	.....	.....	.....	.....	69·31

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of trees.	Under one cubit.	1 & 2	2 & 3
						Acres.					
Acres 2,875; square miles 4·49.	**Block 25, *situated in Tuppeh Baree.***										
	North.—The boundary between the Kedh and Gadee mouzahs; then a demarcated line running first south then east on to the Oorunga below the junction with the Pooboos. *East.*—The Oorunga nuddy until it meets the boundary between the Kedh and the Hehegurha mouzahs. *South.*—The boundary between the Kedh and Hehegurha mouzahs; then the boundary between the Kedh and Choongrah mouzahs; then the boundary between the Baree and Doorjag tuppehs. *West.*—The boundary between the Baree and Doorjag tuppehs.	Although the valuation survey extends over 65 acres, this block contains few trees of any size, and certainly no timber: poor as regards bamboos; any there are, are scattered about in the northern part of the block.	The Oorunga river and the Cheepadohur road.	One village of a few houses lying just inside the eastern boundary.	15	65	2·26	Asan ...	24,322	1,495	862
								Gamhar ...	43	.....	86
								Garso ...	.....	.....	.....
								Ginyan ...	1,236	489	86
								Jamun ...	.....	.....	.....
								Jamti ...	230	43	86
								Khaua ...	.....	.....	.....
								Karam ...	115	129	43
								Khair ...	98,814	891	431
								Kumbi ...	.....	.....	.....
								Kusum ...	43	.....	43
								Mahwa ...	129	129	129
								Paras ...	632	661	43
								Persar ...	517	86	43
								Sakwa ...	50,312	661	258
								Seeda ...	16,617	86	.....
								Dowta ...	47,064	387	.....
								Then ...	12,095	129	43
								Sissu ...	.....	.....	.....
								Total ...	253,069	5,186	2,153
Acres 1,755; square miles 2·74.	**Block 26, *situated in Tuppeh Baree.***										
	North.—The Oorunga river. *East.*—A demarcated line running from the Oorunga river south for about one mile; then south-east until reaching the boundary of the Doomurkhar and Rubdhee mouzahs; then a demarcated line running first south-west for a short distance; then along the Rubdhee nuddy to its junction with the Teorahee nuddy; then up same until reaching the boundary between the Rubdhee and Lookoomkhar mouzahs. *South.*—The boundary between the Rubdhee and Lookoomkhar mouzahs. *West.*—The boundary between the Doomurkhar and Buksah mouzahs; then the boundary between the Doomur-khar and Damudur-khar mouzahs; then a demarcated line running north-west until reaching the Betlah river; then along the Betlah river to its junction with the Oorunga.	The great number of bamboos ought to be fair source of revenue, situated as the block is, namely so near the Oorunga. Poorly stocked as regards timber trees, as the valuation survey shows.	The Oorunga river and Daltongunge road.	A few houses near the eastern boundary.	10	34·5	2·00	Asan ...	153	305	.....
								Gamhar ...	51	153	51
								Garso ...	.....	.....	.....
								Ginyan ...	2,230	1,778	560
								Jamun ...	509	153	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	1,325	459	407
								Khair ...	44,859	1,221	102
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	51	.....
								Mahwa ...	.....	.....	.....
								Paras ...	25,244	1,018	509
								Persar ...	.....	51	102
								Sakwa ...	.....	.....	.....
								Seeda ...	14,658	204	.....
								Dowta ...	7,176	509	102
								Then ...	763	102	.....
								Sissu ...	.....	.....	.....
								Total ...	96,976	6,004	1,833
Acres 2,301; square miles 3·60.	**Block 27, *situated in Tuppeh Baree.***										
	North.—A demarcated line running west from the boundary between Labhur and Toongaree mouzahs, south of the Labhur village; then down the Labhur nuddy somewhat north; then a demarcated line running about south-east until reaching the Moondoh nuddy. *East.*—A demarcated line running south and a little west of Moondoh village; then a demarcated line running due east until reaching the boundary between Moondoh and Hurratoo; then south along the boundary between Moondoh and Hurratoo mouzahs. *South.*—The boundary between Moondoh and Hurratoo; then the boundary between Baree and Khamee tuppehs. *West.*—The boundary between Baree and Khamee tuppehs.	Well stocked with *sál*, but little of same of any dimensions; few mahwa; some good *asan* and *then*, also some few *kusum*, *karam* and *jamun*. The higher lying portion of this block is very rich in bamboos.	Labhur road and Jeewa nuddy.	None ...	None	74	3·21	Asan ...	11,482	2,140	690
								Gamhar ...	345	124	.....
								Garso ...	.....	.....	.....
								Ginyan ...	3,866	644	311
								Jamun ...	62	.....	.....
								Jamti ...	1,427	1,135	690
								Khaua ...	.....	.....	.....
								Karam ...	782	253	614
								Khair ...	12,200	345	124
								Kumbi ...	.....	.....	.....
								Kusum ...	1,427	437	155
								Mahwa ...	460	216	232
								Paras ...	.....	31	62
								Persar ...	948	598	529
								Sakwa ...	74,044	1,519	252
								Seeda ...	12,287	1,335	216
								Dowta ...	11,053	3,451	1,702
								Then ...	18,050	3,037	989
								Sissu ...	345	520	31
								Total ...	149,673	15,794	6,417
Acres 500; square miles 0·78.	**Block 28, *situated in Tuppeh Baree.***										
	North and East.—A demarcated line running from the boundary between the Oopag and Koorumkheta mouzahs to the Ranneedih river. *South and West.*—The boundary between the Koorumkheta and Kutteeyah mouzahs; then the boundary between the Koorumkheta and Umwateekur mouzahs, and then the boundary between the Koorumkheta and Oopag mouzahs.	Contains principally *sál*, little of which however is of any size; fairly rich in *mahwa* and *persar*, the latter being in some cases of considerable girth. Moderately rich in bamboos in the southern part.	New cart road.	None ...	None	18	3·6	Asan ...	5,170	1,140	166
								Gamhar ...	360	111	27
								Garso ...	.....	.....	.....
								Ginyan ...	139	83	.....
								Jamun ...	.....	.....	.....
								Jamti ...	360	333	83
								Khaua ...	.....	.....	.....
								Karam ...	557	333	111
								Khair ...	1,500	27	.....
								Kumbi ...	27	.....	.....
								Kusum ...	333	222	195
								Mahwa ...	2,750	1,695	610
								Paras ...	83	.....	.....
								Persar ...	945	333	333
								Sakwa ...	22,335	360	27
								Seeda ...	2,305	222	56
								Dowta ...	5,360	2,000	360
								Then ...	7,275	750	111
								Sissu ...	27	.....	.....
								Total ...	49,526	7,639	2,079

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
43	86	.....	...	...	...	...	...	26,808	8·46	0·50	0·30	0·02	0·03	.....	.....	.....	.....	.....	.....	9·33
.....	.....	.....	...	...	...	...	...	129	0·02	.....	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·05
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
86	.....	.....	...	...	...	...	...	1,897	0·43	0·17	0·03	0·03	.....	.....	.....	.....	.....	.....	.....	0·66
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	359	0·08	0·02	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·13
.....	86	.....	...	...	...	...	...	86	.....	.....	.....	.....	0·03	.....	.....	.....	.....	.....	.....	0·03
.....	86	43	...	...	...	...	...	416	0·40	0·05	0·02	.....	0·03	0·02	.....	.....	.....	.....	.....	0·52
43	.....	.....	...	...	...	...	...	100,179	34·87	0·31	0·15	0·02	.....	.....	.....	.....	.....	.....	.....	34·85
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	43	.....	...	...	...	...	...	172	0·02	.....	0·02	0·02	0·02	.....	.....	.....	.....	.....	.....	0·08
86	129	.....	...	43	...	...	...	645	0·05	0·05	0·05	0·03	0·05	.....	.....	0·02	.....	.....	.....	0·25
86	.....	.....	...	...	...	...	...	1,422	2·20	0·23	0·02	0·03	.....	.....	.....	.....	.....	.....	.....	2·48
.....	.....	.....	...	...	...	...	...	646	0·18	0·03	0·02	.....	.....	.....	.....	.....	.....	.....	.....	0·23
.....	43	.....	...	...	...	...	...	51,274	17·50	0·23	0·09	.....	0·02	.....	.....	.....	.....	.....	.....	17·84
.....	.....	.....	...	...	...	...	...	16,703	5·78	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	5·81
.....	.....	.....	...	...	...	...	...	47,451	16·37	0·14	.....	.....	.....	.....	.....	.....	.....	.....	.....	16·51
.....	.....	.....	...	...	...	...	...	13,167	4·52	0·05	0·02	.....	.....	.....	.....	.....	.....	.....	.....	4·59
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
387	473	43	...	43	...	...	...	261,354	90·38	1·83	0·78	0·15	0·18	0·02	.....	0·02	.....	.....	.....	93·36
153	51	.....	...	...	...	...	...	662	0·09	0·18	.....	0·09	0·03	.....	.....	.....	.....	.....	.....	0·39
.....	.....	.....	...	...	...	...	...	255	0·03	0·09	0·03	.....	.....	.....	.....	.....	.....	.....	.....	0·15
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
254	.....	.....	...	...	...	...	...	4,831	1·28	1·02	0·32	0·15	.....	.....	.....	.....	.....	.....	.....	2·77
.....	.....	.....	...	...	...	...	...	662	0·29	0·09	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·38
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
662	254	.....	...	...	...	...	...	3,107	0·75	0·26	0·23	0·38	0·15	.....	.....	.....	.....	.....	.....	1·77
.....	.....	.....	...	...	...	...	...	46,182	27·84	0·70	0·06	.....	.....	.....	.....	.....	.....	.....	.....	28·60
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	51	.....	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·03
.....	51	.....	...	...	...	...	...	51	.....	.....	.....	.....	0·03	.....	.....	.....	.....	.....	.....	0·03
102	.....	.....	...	...	...	...	...	23,873	14·38	0·58	0·29	0·06	.....	.....	.....	.....	.....	.....	.....	15·31
51	.....	.....	...	...	...	...	...	204	.....	0·03	0·06	0·03	.....	.....	.....	.....	.....	.....	.....	0·12
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	14,362	8·35	0·12	.....	.....	.....	.....	.....	.....	.....	.....	.....	8·47
51	.....	.....	...	...	...	...	...	7,838	4·09	0·29	0·06	0·03	.....	.....	.....	.....	.....	.....	.....	4·47
.....	.....	.....	...	...	...	...	...	364	0·44	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·50
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,[illegible]	356	.....	...	...	...	...	...	106,442	57·54	3·45	1·05	0·74	0·21	.....	.....	.....	.....	.....	.....	62·99
414	124	.....	...	...	...	...	...	14,850	4·09	0·23	0·30	0·18	0·05	.....	.....	.....	.....	.....	.....	6·45
.....	.....	.....	...	...	...	...	...	469	0·15	0·05	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·20
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
93	.....	.....	...	...	...	...	...	4,914	1·68	0·28	0·14	0·04	.....	.....	.....	.....	.....	.....	.....	2·14
.....	31	.....	155	...	...	...	...	248	0·03	.....	.....	.....	0·01	.....	0·07	.....	.....	.....	.....	0·11
989	276	.....	...	...	...	...	...	4,517	0·62	0·58	0·30	0·43	0·12	.....	.....	.....	.....	.....	.....	2·05
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
311	62	.....	...	...	...	...	...	1,822	0·34	0·11	0·18	0·14	0·03	.....	.....	.....	.....	.....	.....	0·80
.....	.....	.....	...	...	...	...	...	12,669	5·30	0·15	0·05	.....	.....	.....	.....	.....	.....	.....	.....	5·50
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
218	155	.....	...	...	...	...	...	2,392	0·62	0·19	0·07	0·09	0·07	.....	.....	.....	.....	.....	.....	1·04
216	31	.....	...	...	...	...	...	1,175	0·20	0·09	0·11	0·09	0·01	.....	.....	.....	.....	.....	.....	0·50
.....	.....	.....	...	...	...	...	...	93	.....	0·01	0·02	.....	.....	.....	.....	.....	.....	.....	.....	0·04
346	352	31	...	...	...	...	...	2,699	0·41	0·26	0·23	0·15	0·11	0·01	.....	.....	.....	.....	.....	1·17
252	31	.....	...	...	...	...	...	76,098	32·57	0·66	0·11	0·11	0·01	.....	.....	.....	.....	.....	.....	33·46
93	.....	.....	...	...	...	...	...	13,931	5·34	0·58	0·09	0·04	.....	.....	.....	.....	.....	.....	.....	6·05
782	62	.....	...	...	...	...	...	17,050	4·81	1·50	0·74	0·32	0·03	.....	.....	.....	.....	.....	.....	7·42
713	63	.....	...	...	...	...	...	22,852	7·84	1·32	0·43	0·31	0·03	.....	.....	.....	.....	.....	.....	9·93
.....	.....	.....	...	...	...	...	...	905	0·15	0·23	0·01	.....	.....	.....	.....	.....	.....	.....	.....	0·39
4,427	1,087	31	155	...	...	...	...	177,584	65·05	6·94	2·79	1·92	0·47	0·01	0·07	.....	.....	.....	.....	77·25
56	27	.....	...	...	...	...	...	6,559	10·34	2·28	0·33	0·11	0·06	.....	.....	.....	.....	.....	.....	13·12
.....	.....	.....	...	...	...	...	...	498	0·72	0·22	0·06	.....	.....	.....	.....	.....	.....	.....	.....	1·00
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	222	0·29	0·17	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·46
.....	.....	.....		...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	.....	.....	...	...	...	...	...	803	0·72	0·67	0·22	0·06	.....	.....	.....	.....	.....	.....	.....	1·67
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	.....	.....	...	...	...	...	...	1,028	1·12	0·66	0·22	0·06	.....	.....	.....	.....	.....	.....	.....	2·06
.....	.....	.....	...	...	...	...	...	1,527	3·00	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	3·06
.....	.....	.....	...	...	...	...	...	27	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·06
.....	27	.....	...	...	...	...	...	777	0·67	0·44	0·39	.....	0·06	.....	.....	.....	.....	.....	.....	1·56
139	56	.....	...	...	...	...	...	5,250	5·50	3·39	1·22	0·29	0·11	.....	.....	.....	.....	.....	.....	10·51
.....	.....	.....	...	...	...	...	...	83	0·17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·17
222	111	56	...	...	...	...	...	2,000	1·89	0·67	0·67	0·44	0·22	0·11	.....	.....	.....	.....	.....	4·00
56	27	.....	...	...	...	...	...	22,805	44·67	0·72	0·00	0·11	0·06	.....	.....	.....	.....	.....	.....	45·62
.....	.....	.....	...	...	...	...	...	2,583	4·81	0·44	0·11	.....	.....	.....	.....	.....	.....	.....	.....	5·16
111	.....	.....	...	...	...	...	...	7,831	10·72	4·00	0·72	0·22	.....	.....	.....	.....	.....	.....	.....	15·66
27	.....	.....	...	...	...	...	...	8,198	14·55	1·56	0·22	0·00	.....	.....	.....	.....	.....	.....	.....	16·39
.....	.....	.....	...	...	...	...	...	27	0·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·06
665	248	56	...	...	...	...	...	60,213	99·09	15·28	4·22	1·35	0·51	0·11	.....	.....	.....	.....	.....	120·56

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
						Acres.					
Acres 3,730; square miles 5·83.	**Block 29**, *situated in Tuppeh Baree.* *North.*—A demarcated line running from the boundary of the Kumandee and Baigatola mouzahs to the boundary of the Kumandee and Moondhur mouzahs; then a demarcated line running south to the Moondhur river; and then a demarcated line running east to the boundary of the Moondhur and Bindee mouzahs. *East.*—The boundary between the Moondhur and Koodag mouzahs. *South.*—The boundary between the Moondhur and Oorwaie mouzah; then the boundary between the Kumandee and Kookoo mouzahs. *West.*—The boundary between the Kumandee and Baigatola mouzahs.	Rich in *sál* all through the block, none of which has been allowed to attain any size; very little *khair*; contains some *dowta*, *asan*, *persar* and *mahwa*; moderately rich in bamboos.	Oorunga river and new cart road.	A few scattered houses.	12	76	2·04	Asan ...	16,688	2,699	1,178
								Gamhar ...	2,111	393	.....
								Garso ...	.....	.....	.....
								Ginyan ...	5,408	490	245
								Jamun ...	147	.....	.....
								Jamti ...	4,465	1,384	540
								Khaua ...	.....	.....	.....
								Karam ...	441	634	147
								Khair ...	2,160	.....	.....
								Kumbi ...	245	49	98
								Kusum ...	3,189	1,325	592
								Mahwa ...	21,261	5,446	690
								Paras ...	441	.....	.....
								Persar ...	12,514	3,581	1,060
								Sakwa ...	179,637	634	49
								Seeda ...	18,463	1,472	346
								Dowta ...	45,006	8,243	1,031
								Then ...	29,728	1,902	245
								Sissu ...	.....	.....	.....
								Total ...	341,904	28,152	7,221
Acres 3,070; square miles 4·80.	**Block 30**, *situated in Tuppeh Baree.* *North.*—A demarcated line running from the boundary of the Kumandee and Nowagadha mouzahs first south-east, then north-east, and then east until it meets the boundary between the Nowagadha and Bindee mouzahs; then a demarcated line running east along a small nuddy; then again east along a demarcated line until meeting the boundary of the Bindee and Bichrah mouzahs. *East.*—Along the boundary between the Bindee and Bichrah mouzahs. *South.*—The boundary between the Bindee and Koodaw mouzahs; then runs north along the boundary between the Bindee and Moondhur mouzahs; and then again west along the boundary of the Nowagadha and Moondhur mouzahs. *West.*—The boundary between the Nowagadha and Kumandee mouzahs.	The hilly portion of the block contains some good timber; the *sál* is found all through it, both in the hills as well as down on the level. The northern portion is particularly rich in the same. The foot of the hills is well stocked with *mahwa* and some *kusum*; the southern or hilly portion contains some fine *dowta*, *persar*, *hurré* and *seeda*. The *sál* has suffered all through from tapping. There are no bamboos near the foot of the hills or the level ground; moderately rich in the southern and hilly portion of the block.	The Oorunga river.	None ...	None	91	2·96	Asan ...	26,635	2,496	677
								Gamhar ...	1,658	776	203
								Garso ...	.....	.....	.....
								Ginyan ...	1,552	540	135
								Jamun ...	.....	.....	.....
								Jamti ...	236	304	34
								Khaua ...	.....	.....	.....
								Karam ...	1,382	236	169
								Khair ...	13,293	34	.....
								Kumbi ...	101	34	.....
								Kusum ...	776	507	135
								Mahwa ...	8,258	4,353	2,306
								Paras ...	682	135	.....
								Persar ...	3,205	1,552	1,485
								Sakwa ...	112,515	912	540
								Seeda ...	15,381	2,617	236
								Dowta ...	44,714	7,552	3,458
								Then ...	8,703	1,859	609
								Sissu ...	.....	.....	.....
								Total ...	239,141	23,907	10,167
Acres 394; square miles 0·61.	**Block 31**, *situated in Tuppeh Baree.* *North.*—The Koel river ... ... *East.*—The Koel river. *South.*—The boundary between Ledoopah and Choriyah mouzahs. *West.*—A demarcated line; then a small nuddy running north to the Koel.	This block is simply valueless at present. Although same contains a good amount of *sál*, still the forest is all disconnected by plots of cultivation. Along the river there are some few *kusum* and *asan*; poor in bamboos.	The Oorunga river.	None ...	None	23	5·8	Asan ...	1,552	240	120
								Gamhar ...	.....	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	17	.....	.....
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	68	17	.....
								Khair ...	4,488	34	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	34	17
								Mahwa ...	.....	.....	.....
								Paras ...	325	17	.....
								Persar ...	.....	.....	34
								Sakwa ...	15,145	51	136
								Seeda ...	1,541	.....	.....
								Dowta ...	3,169	206	.....
								Then ...	3,871	.....	.....
								Sissu ...	.....	.....	.....
								Total ...	30,176	599	307
Acres 442; square miles 0·69.	**Block 32**, *situated in Tuppeh Baree.* *North.*—The boundary between Ledoopah and Purkee mouzahs. *East.*—The boundary between Ledoopah and Hootwag mouzahs. *South.*—The Koel river. *West.*—The Koel river.	Although this block contains some *sál*, the general appearance of the block is very poor indeed. Near the river there are a few *kusum* and *asan*, otherwise this block contains no timber trees: poor in bamboos.	The Oorunga river.	None ...	None	24	5·4	Asan ...	5,568	351	241
								Gamhar ...	18	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	92	.....	.....
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	18
								Khaua ...	.....	.....	.....
								Karam ...	37	.....	.....
								Khair ...	12,006	.....	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	18	18	37
								Mahwa ...	54	54	18
								Paras ...	888	129	18
								Persar ...	37	.....	74
								Sakwa ...	16,872	37	37
								Seeda ...	3,145	92	.....
								Dowta ...	4,626	444	18
								Then ...	6,291	.....	.....
								Sissu ...	.....	.....	.....
								Total ...	49,652	1,125	461

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block.									Total amount of material per acre.												
Between								Total.	Under one cubit.	Between											Total.
3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12			1 & 2	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12		
Cubits.									Cubits.												
441	196	.....	...	...	...	...	...	21,202	4·47	0·72	0·32	0·12	0·05	.....	.....	.....	.....	.....	.....		5·68
.....	.....	.....	...	...	...	...	...	2,504	0·57	0·11	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·69
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	6,143	1·45	0·13	0·07	.....	.....	.....	.....	.....	.....	.....	.....		1·65
49	49	.....	...	...	...	...	...	245	0·04	.....	.....	0·01	0·01	.....	.....	.....	.....	.....	.....		0·06
245	.....	.....	...	...	...	...	...	6,634	1·20	0·37	0·14	0·07	.....	.....	.....	.....	.....	.....	.....		1·78
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
392	.....	.....	...	...	...	...	...	1,614	0·12	0·17	0·04	0·11	.....	.....	.....	.....	.....	.....	.....		0·44
.....	.....	.....	...	...	...	...	...	2,160	0·58	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·58
.....	.....	.....	...	...	...	...	...	392	0·07	0·01	0·02	.....	.....	.....	.....	.....	.....	.....	.....		0·11
98	245	.....	...	...	...	...	...	5,449	0·86	0·33	0·19	0·03	0·07	.....	.....	.....	.....	.....	.....		1·48
1,038	49	.....	...	...	...	...	...	28,484	5·70	1·46	0·19	0·28	0·01	.....	.....	.....	.....	.....	.....		7·64
.....	.....	.....	...	...	...	...	...	441	0·12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·12
1,384	147	.....	...	...	...	...	...	19,586	3·36	0·96	0·53	0·37	0·04	.....	.....	.....	.....	.....	.....		5·26
98	98	.....	...	...	...	...	...	180,516	48·16	0·17	0·01	0·03	0·03	.....	.....	.....	.....	.....	.....		48·40
.....	.....	.....	...	...	...	...	...	20,281	4·95	0·40	0·09	.....	.....	.....	.....	.....	.....	.....	.....		5·44
294	.....	.....	...	...	...	...	...	54,574	12·07	2·21	0·28	0·08	.....	.....	.....	.....	.....	.....	.....		14·64
98	.....	.....	...	...	...	...	...	31,973	7·97	0·51	0·07	0·03	.....	.....	.....	.....	.....	.....	.....		8·58
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
4,137	784	.....	...	...	...	...	...	382,198	91·69	7·55	1·96	1·13	0·21	.....	.....	.....	.....	.....	.....		102·54
574	101	.....	...	...	...	...	...	30,733	8·69	0·81	0·29	0·19	0·03	.....	.....	.....	.....	.....	.....		10·01
34	.....	.....	...	...	...	...	...	2,671	0·54	0·25	0·07	0·01	.....	.....	.....	.....	.....	.....	.....		0·87
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
101	68	.....	...	...	...	...	...	2,396	0·51	0·18	0·04	0·03	0·02	.....	.....	.....	.....	.....	.....		0·78
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
169	.....	.....	...	...	...	...	...	743	0·08	0·10	0·01	0·06	.....	.....	.....	.....	.....	.....	.....		0·25
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
203	203	.....	...	...	...	...	...	2,193	0·45	0·08	0·06	0·07	0·07	.....	.....	.....	.....	.....	.....		0·73
.....	.....	.....	...	...	...	...	...	13,327	4·33	0·01	.....	.....	.....	.....	.....	.....	.....	.....	.....		4·34
.....	34	.....	...	...	...	...	...	169	0·03	0·01	.....	.....	0·01	.....	.....	.....	.....	.....	.....		0·05
270	135	.....	...	...	...	...	...	1,823	0·25	0·17	0·04	0·09	0·04	...	.....	.....	.....	.....	.....		0·59
2,238	776	101	...	...	...	...	...	18,027	2·69	1·42	1·08	0·73	0·25	0·03	.....	.....	.....	.....	.....		5·20
34	.....	.....	...	...	...	...	...	851	0·22	0·04	.....	0·01	.....	.....	.....	.....	.....	.....	.....		0·27
912	574	.....	34	...	...	...	...	7,762	1·04	0·51	0·48	0·30	0·19	.....	00·1	.....	.....	.....	.....		2·53
135	34	.....	...	...	...	...	...	114,136	36·65	0·30	0·18	0·04	0·01	.....	.....	.....	.....	.....	.....		37·15
34	.....	.....	...	...	...	...	...	18,268	5·01	0·58	0·08	0·01	.....	.....	.....	.....	.....	.....	.....		5·68
1,111	135	.....	...	...	...	...	...	56,950	14·63	2·46	1·12	0·36	0·04	.....	.....	.....	.....	.....	.....		18·61
203	.....	.....	...	...	...	...	...	11,374	3·84	0·60	0·20	0·07	.....	.....	.....	.....	.....	.....	.....		4·71
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
6,013	2,060	101	34	...	...	...	...	281,423	78·96	7·52	3·65	1·97	0·66	0·03	0·01	.....	.....	.....	.....		92·80
51	.....	.....	...	...	...	...	...	1,903	7·43	0·61	0·30	0·13	.....	.....	.....	.....	.....	.....	.....		8·47
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	17	0·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·04
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	17	.....	...	...	...	...	...	102	0·17	0·04	.....	.....	0·04	.....	.....	.....	.....	.....	.....		0·25
.....	.....	.....	...	...	...	...	...	4,522	11·39	0·09	.....	.....	.....	.....	.....	.....	.....	.....	.....		11·48
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
51	17	.....	...	...	...	...	...	119	.....	0·09	0·04	0·13	0·04	.....	.....	.....	.....	.....	.....		0·30
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	342	0·83	0·04	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·87
.....	.....	.....	...	...	...	...	...	34	.....	.....	0·09	.....	.....	.....	.....	.....	.....	.....	.....		0·09
68	17	.....	...	...	...	...	...	15,417	38·44	0·13	0·35	0·17	0·04	.....	.....	.....	.....	.....	.....		39·13
.....	.....	.....	...	...	...	...	...	1,541	3·91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		3·91
.....	.....	.....	...	...	...	...	...	3,375	8·04	0·52	.....	.....	.....	.....	.....	.....	.....	.....	.....		8·56
.....	.....	.....	...	...	...	...	...	3,871	9·83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		9·83
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
170	51	.....	...	...	...	...	...	31,308	80·08	1·52	0·78	0·43	0·12	.....	.....	.....	.....	.....	.....		83·93
185	37	.....	...	...	...	...	...	6,382	12·54	0·79	0·54	0·42	0·08	.....	.....	.....	.....	.....	.....		14·37
.....	.....	.....	...	...	...	...	...	18	0·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·04
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
37	18	.....	...	...	...	...	...	147	0·21	.....	.....	0·08	0·04	.....	.....	.....	.....	.....	.....		0·33
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	18	.....	.....	0·04	.....	.....	.....	.....	.....	.....	.....	.....		0·04
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
.....	.....	.....	...	...	...	...	...	37	0·08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		0·08
.....	.....	.....	...	...	...	...	...	12,006	27·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		27·04
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
54	18	.....	...	...	...	...	...	145	0·04	0·04	0·08	0·13	0·04	.....	.....	.....	.....	.....	.....		0·33
37	18	.....	...	...	...	...	...	181	0·13	0·13	0·04	0·08	0·04	.....	.....	.....	.....	.....	.....		0·42
54	.....	.....	...	...	...	...	...	1,089	2·00	0·29	0·04	0·13	.....	.....	.....	.....	.....	.....	.....		2·46
.....	.....	.....	...	...	...	...	...	111	0·08	.....	0·16	.....	.....	.....	.....	.....	.....	.....	.....		0·24
.....	.....	.....	...	...	...	...	...	16,946	38·00	0·08	0·68	.....	.....	.....	.....	.....	.....	.....	.....		38·16
.....	.....	.....	...	...	...	...	...	3,337	7·08	0·21	.....	.....	.....	.....	.....	.....	.....	.....	.....		7·29
18	.....	.....	...	...	...	...	...	5,106	10·42	1·00	0·04	0·04	.....	.....	.....	.....	.....	.....	.....		11·50
.....	.....	.....	...	...	...	...	...	6,291	14·17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		14·17
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
385	91	.....	...	...	...	...	...	51,714	111·83	2·54	1·02	0·88	0·20	.....	.....	.....	.....	.....	.....		116·47

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
						Acres.					
Acres 1,458; square miles 2·28.	**Block 33, *situated in Tuppeh Baree.*** *North.*—The boundary between the Bindee and Deobar mouzahs, first running east, then north-east to the Koel. *East.*—The Koel river; then the boundary between the Bindee and Ledoopah mouzahs. *South.*—A demarcated line running from the Bindee-Ledoopah boundary south-west until reaching a small nuddy; then a demarcated line running west along this nuddy. *West.*—The boundary between the Bindee and Kumandee mouzahs.	No value certainly at present. Block, however, consists principally of young *sál*. These, however, are in most cases merely shoots from the old stumps, and not poles as they appear to be. Just near the river there are a few, otherwise this block is devoid of bamboos.	The Oorunga river.	None ...	None	53	3·64	Asan ...	13,457	1,050	274
								Gamhar ...	.....	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	165	27	.....
								Jamun ...	.....	165	.....
								Jamti ...	494	.....	137
								Khaua ...	.....	.....	.....
								Karam ...	192	.....	.....
								Khair ...	15,324	82	27
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	55	.....
								Mahwa ...	440	192	274
								Paras ...	247	82	27
								Persar ...	404	165	110
								Sakwa ...	65,173	685	356
								Seeda ..	10,206	165	55
								Dowta ...	23,415	1,064	137
								Then ...	12,743	137	55
								Sissu ...	.....	.....	.....
								Total ...	142,350	3,860	1,452
Acres 3,470; square miles 5·42.	**Block 34, *situated in Tuppeh Baree.*** *North.*—A demarcated line running first nearly east, then south-east; then again nearly east until reaching the Sookree nuddy; then along the boundary between the Deobar and the Nudbelwah mouzahs. *East.*—The boundary between Baree and Poondar tuppehs. *South.*—A demarcated line running west, then for a short distance south; then along the boundary south-east until reaching the Oorunga; then down the Oorunga, and along the boundary between the Deobar and Putokl mouzahs; then again down the Oorunga river. *West.*—A demarcated line running north-east from the Oorunga to within a short distance east of the Jumna village.	With the exception of a small patch near the centre, which contains some good *dowta*, *asan* and *persar*, the show of timber is very inferior: poor in bamboos.	Oorunga river, Munkha road.	None ...	None	88	2·52	Asan ...	28,002	4,511	1,538
								Gamhar ...	158	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	276	117	117
								Jamun ...	.....	.....	.....
								Jamti ...	1,068	474	790
								Khaua ...	.....	.....	.....
								Karam ...	593	117	39
								Khair ...	44,069	316	.....
								Kumbi ...	.....	.....	.....
								Kusum ...	39	117	39
								Mahwa ...	526	118	316
								Paras ...	1,896	356	119
								Persar ...	828	237	395
								Sakwa ...	138,557	2,568	828
								Seeda ...	15,962	79	.....
								Dowta ...	51,044	6,675	2,838
								Then ...	11,243	1,423	119
								Sissu ...	.....	.....	.....
								Total ...	294,261	17,148	6,458
Acres 3,143; square miles 4·91.	**Block 35, *situated in Tuppeh Baree.*** *North.*—The boundary between the Sinjoh and Munkah mouzahs. *East.*—The boundary between the Sinjoh and Joorgoor mouzahs, until reaching the Kurkut nuddy; then down the Kurkut until reaching the boundary between the Sinjoh and Nudbelwah mouzahs. *South.*—The boundary between the Sinjoh and Nudbelwah mouzahs. *West.*—A demarcated line running about north, until reaching the boundary of the Sinjoh and Munkah mouzahs.	With the exception of a few big *asan* near the river, this block is valueless. It is, however, well stocked with young *sál* and *sál* shoots.	Munkha road.	Lali ...	20	70	2·22	Asan ...	20,135	5,123	1,351
								Gamhar ...	94	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ..	47	47	.....
								Jamun ...	94	.....	.....
								Jamti ...	94	94	94
								Khaua ...	.....	.....	.....
								Karam ...	503	.....	.....
								Khair ...	77,318	440	566
								Kumbi ...	.....	47	.....
								Kusum ...	.....	.....	47
								Mahwa ...	.....	.....	.....
								Paras ...	12,760	1,226	1,226
								Persar ...	346	220	94
								Sakwa ...	106,550	1,069	314
								Seeda ...	7,220	.....	.....
								Dowta ...	20,869	2,294	94
								Then ...	8,769	47	.....
								Sissu ...	.....	.....	.....
								Total ...	2,63,808	10,607	3,786
Acres. 760; square miles 11·9.	**Block 36, *situated in Tuppeh Baree.*** *North.*—The Suthbuhni nuddy, which forms the boundary between the Koree and Kummaroh mouzahs. *East.*—A demarcated line running south up a small hill stream, and on to the boundary between the Koree and Koelee mouzahs. *South.*—The boundary between the Koree and Koelee mouzahs. *West.*—The boundary between the Koree and Rankee mouzahs.	Valueless as regards timbers; as valuation survey shows, the only revenue to be realized for years being from the bamboos. This block contains no *sál*.	Daltongunge road.	None ...	None	9	1·2	Asan ...	.....	.....	.....
								Gamhar ...	.....	.....	.....
								Garso ...	.....	.....	.....
								Ginyan ...	253	337	253
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	.....	.....
								Karam ...	.....	.....	84
								Khair ...	27,021	591	253
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	.....	.....
								Mahwa ...	.....	.....	.....
								Paras ...	928	84	.....
								Persar ...	.....	.....	.....
								Sakwa ...	.....	.....	.....
								Seeda ...	337	.....	.....
								Dowta ...	4,560	168	84
								Then ...	.....	.....	.....
								Sissu ...	.....	.....	.....
								Total ...	33,099	1,180	674

Forests in the Palamow Forest Division.—(Continued.)

CONTENTS OF BLOCK.

Total amount of material in block. Between 3 & 4 (Cubits.)	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.	Total amount of material per acre. Under one cubit.	Between 1 & 2 (Cubits.)	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	Total.
274	55	...	...	...	...	...	...	15,110	9·23	0·72	0·19	0·19	0·04	...	...	...	...	...	...	10·37
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	192	0·11	0·02	...	...	...	...	...	...	...	...	...	0·13
27	...	...	...	...	...	...	...	192	...	0·11	...	0·02	...	...	...	...	...	...	...	0·13
...	27	...	...	...	...	...	...	658	0·34	...	0·09	...	0·02	...	...	...	...	...	...	0·45
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
55	...	...	...	...	...	...	...	247	0·13	...	...	0·04	...	...	...	...	...	...	...	0·17
...	...	...	...	...	...	...	...	15,433	10·51	0·06	0·02	...	...	...	...	...	...	...	...	10·59
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	55	...	...	...	...	...	...	137	...	0·04	...	0·02	0·04	...	...	...	...	...	...	0·10
302	27	...	...	...	...	...	...	1,235	0·30	0·13	0·19	0·21	0·02	...	...	...	...	...	...	0·85
27	...	...	...	...	...	...	...	383	0·17	0·06	0·02	0·02	...	...	...	...	...	...	...	0·27
82	82	...	...	...	...	...	...	933	0·34	0·08	0·11	0·06	0·06	...	...	...	...	...	...	0·65
247	55	...	...	...	...	...	...	66,516	44·70	0·47	0·24	0·17	0·04	...	...	...	...	...	...	45·62
...	...	...	...	...	...	...	...	10,426	7·00	0·11	0·04	...	...	...	...	...	...	...	...	7·15
...	...	...	...	...	...	...	...	24,616	16·06	0·73	0·09	...	...	...	...	...	...	...	...	16·88
27	...	...	...	...	...	...	...	12,962	8·74	0·09	0·04	0·02	...	...	...	...	...	...	...	8·89
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,068	301	...	...	...	...	...	...	149,040	97·63	2·85	1·00	0·75	0·22	...	...	...	...	...	...	102·25
1,145	79	79	...	...	...	...	...	35,154	8·11	1·30	0·39	0·33	0·02	0·02	...	...	...	...	...	10·17
...	...	...	...	...	...	...	...	158	0·05	...	...	...	...	...	...	...	...	...	...	0·05
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	...	...	...	...	...	...	...	549	0·08	0·05	0·03	0·01	...	...	...	...	...	...	...	0·15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
351	117	...	...	...	...	...	...	2,800	0·31	0·14	0·23	0·10	0·03	...	...	...	...	...	...	0·81
...	39	...	...	...	...	...	...	39	...	...	...	...	0·01	...	...	...	...	...	...	0·01
...	...	...	...	...	...	...	...	749	0·17	0·03	0·01	...	...	...	...	...	...	...	...	0·21
...	...	...	...	...	...	...	...	44,385	12·70	0·09	...	...	...	...	...	...	...	...	...	12·79
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	39	...	...	...	...	...	...	273	0·01	0·03	0·01	0·01	0·01	...	...	...	...	...	...	0·07
...	...	...	...	...	...	...	...	1,000	0·15	0·05	0·09	...	...	...	...	...	...	...	...	0·29
119	...	...	...	...	...	...	...	2,490	0·55	0·10	0·06	0·06	...	...	...	...	...	...	...	0·77
158	158	79	...	...	...	...	...	1,855	0·24	0·07	0·11	0·05	0·05	0·02	...	...	...	...	...	0·54
79	...	...	...	...	...	...	...	142,032	39·93	0·74	0·24	0·02	...	...	...	...	...	...	...	40·93
...	...	...	...	...	...	...	...	16,041	4·60	0·02	...	...	...	...	...	...	...	...	...	4·62
513	...	...	...	...	...	...	...	60,590	14·71	1·87	0·68	0·15	...	...	...	...	...	...	...	17·41
...	...	...	...	...	...	...	...	12,785	3·24	0·41	0·06	...	...	...	...	...	...	...	...	3·71
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,443	432	158	...	...	...		...	320,900	84·85	4·88	1·91	0·73	0·12	0·04	...	...	...	...	...	92·53
629	1,351	47	...	...	...	...	...	37,636	9·27	1·63	0·43	0·20	0·43	0·01	...	...	...	...	...	11·97
...	...	...	...	...	...	...	...	94	0·03	...	...	...	...	...	...	...	...	...	...	0·03
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	47	...	...	...	...	...	...	141	0·01	0·01	...	...	0·01	...	...	...	...	...	...	0·03
...	...	...	...	...	...	...	...	94	0·03	...	...	...	...	...	...	...	...	...	...	0·05
...	...	...	...	...	...	...	...	282	0·03	0·03	0·03	...	...	...	...	...	...	...	...	0·09
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	503	0·16	...	...	...	...	...	...	...	...	...	...	0·16
283	94	...	...	...	...	...	...	78,701	24·60	0·14	0·18	0·09	0·03	...	...	...	...	...	...	25·04
...	...	...	...	...	...	...	...	47	...	0·01	...	...	...	...	...	...	...	...	...	0·01
...	47	...	...	...	...	...	...	94	...	...	0·01	...	0·01	...	...	...	...	...	...	0·02
...	47	...	...	...	...	...	...	47	...	...	...	...	0·01	...	...	...	...	...	...	0·01
283	47	...	...	...	...	...	...	15,542	4·06	0·39	0·29	0·09	0·01	...	...	...	...	...	...	4·94
...	47	...	...	...	...	...	...	707	0·11	0·07	0·03	...	0·01	...	...	...	...	...	...	0·22
...	...	...	...	...	...	...	...	107,933	33·90	0·34	0·10	...	...	...	...	...	...	...	...	34·34
...	...	...	...	...	...	...	...	7,229	2·30	...	...	...	...	...	...	...	...	...	...	2·30
...	...	...	...	...	...	...	...	23,257	6·64	0·73	0·03	...	...	...	...	...	...	...	...	7·40
...	...	...	...	...	...	...	...	8,816	2·70	0·01	...	...	...	...	...	...	...	...	...	2·80
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,195	1,680	47	...	...	...	...	...	281,123	83·93	3·36	1·20	0·38	0·51	0·01	...	...	...	...	...	80·39
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
168	...	...	...	...	...	...	...	1,011	0·33	0·44	0·33	0·22	...	...	...	...	...	...	...	1·32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
84	...	...	...	...	...	...	...	168	...	...	0·11	0·11	...	...	...	...	...	...	...	0·22
168	...	...	...	...	...	...	...	28,033	35·56	0·77	0·33	0·22	...	...	...	...	...	...	...	36·88
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1,012	1·22	0·11	...	...	...	...	...	...	...	...	...	1·33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	337	0·44	...	...	...	...	...	...	...	...	...	...	0·44
...	...	...	...	...	...	...	...	4,812	6·00	0·22	0·11	...	...	...	...	...	...	...	...	6·33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
420	...	...	...	...	...	...	...	35,375	43·55	1·54	0·89	0·55	...	...	...	...	...	...	...	46·52

Detailed Account of the Reserved State

Area of block.	Boundaries.	Description of forest.	Line of export.	Villages in Block. Number.	Villages in Block. Number of inhabitants.	Area surveyed.	Percentage of total area surveyed.	Species of tree.	Under one cubit.	1 & 2	2 & 3
Acres 907; square miles 1·42.	Block 37, *situated in Tuppeh Baree.*					Acres.					
	North.—The Myla nuddy until its junction with the Boojooha nuddy; then for a short distance up the same. *East and South.*—The boundary between the Bukoreeya and Agurdheemudunlya mouzahs; then along a demarcated nuddy until reaching the Lumka nuddy; then a demarcated line running west, until reaching the boundary between Bukoreeya and Pipra mouzahs. *West.*—The boundary between the Bukoreeya and Pipra Kalan mouzahs.	Valueless at present as regards timber, there being only a few *karam* trees of any dimensions. Bamboos are certainly the most valuable part of the block at present; *khair* and *seeda* are the trees of most frequent occurrence, but none of them are of any valuable dimensions.	Daltongunge road.	None ...	None	30	3·3	Asan ...	154	.....	.....
								Gambar ...	.....	30	.....
								Garso ...	.....	.....	.....
								Ginyan ...	1,118	1,088	60
								Jamun ...	.....	.....	.....
								Jamti ...	.....	.....	.....
								Khaua ...	.....	30	.....
								Karam ...	483	513	544
								Khair ...	40,740	1,511	1,026
								Kumbi ...	.....	.....	.....
								Kusum ...	.....	.....	.....
								Mahwa ...	.....	.....	.....
								Paras ...	785	181	121
								Persar ...	.....	.....	.....
								Sakwa ...	.....	.....	.....
								Seeda ...	4,171	30	.....
								Dowta ...	816	322	60
								Then ...	.....	.....	.....
								Sissu ...	.....	.....	.....
								Total ...	54,268	3,775	1,811

Forests in the Palamow Forest Division.—(Concluded.)

CONTENTS OF BLOCK.

Total amount of material in block.								Total.	Total amount of material per acre.											Total.
Between									Under one cubit.	Between										
3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12			1 & 2	2 & 3	3 & 4	4 & 5	5 & 6	6 & 7	7 & 8	8 & 9	9 & 10	11 & 12	
Cubits.										Cubits.										
.....	.....	.....	...	...	...	...	...	154	0·17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·07
.....	.....	...	...	...	...	...	...	30	.....	0·03	.....	.....	.....	.....	.....	.....	.....	.....	.....	0·03
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	...	...	...	...	...	2,296	1·23	1·20	0·07	0·03	.....	.....	.....	.....	.....	.....	.....	2·53
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	30	.....	...	...	...	...	...	30	.....	0·03	.....	0·03	.....	.....	.....	.....	.....	.....	.....	0·06
453	121	.....	...	...	...	...	...	2,114	0·53	0·57	0·00	0·50	0·13	.....	.....	.....	.....	.....	.....	2·33
211	.....	.....	...	...	...	...	...	49,488	51·53	1·07	1·13	0·23	.....	.....	.....	.....	.....	.....	.....	54·56
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	...	...	...	...	...	30	.....	.....	.....	0·03	.....	.....	.....	.....	.....	.....	.....	0·03
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	30	.....	...	...	...	...	...	1,117	0·87	0·20	0·13	.....	0·03	.....	.....	.....	.....	.....	.....	1·23
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	...	...	...	...	...	4,252	4·00	0·03	.....	0·03	.....	.....	.....	.....	.....	.....	.....	4·66
.....	.....	.....	...	...	...	...	...	1,268	0·90	0·43	0·07	.....	.....	.....	.....	.....	.....	.....	.....	1·40
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
754	181	.....	...	...	...	...	...	60,729	59·83	4·16	2·00	0·82	0·19	.....	.....	.....	.....	.....	.....	67·00

List of trees observed in Palamow State Forests.

Current number.	Local name.	Systematic name.	Name of family.	REMARKS.
1	Agas	Melia Azadirachta	Meliaceæ	Planted only and only found in villages; fruits edible.
2	Am	Mangifera indica	Anacardiaceæ	The mango tree.
3	Amaltas (Danras) ... Bonurlati ... ... Bonurlaurie	Cassia fistula	Leguminosæ	Tree attaining 2 feet in diameter; fruits used medicinally; wood used for carts, rice-pounders, and bullock "jotes." The flower of the Danras is called the Amaltas.
4	Amera	Ficus glomerata	Urticaceæ	Tree; fruits edible.
5	Amti	Embelia robusta	Myrsineæ	Small tree; maximum diameter 9 inches; leaves used medicinally.
6	Antenni	... ...	.....	Small tree; useless.
7	Arar	Randia dumetorum	Rubiaceæ	A creeper 9 inches in diameter; two species, white and red arar; red used for killing fish, otherwise useless.
8	Arundi	... ...	.....	Small tree 1 inch in diameter. Useless.
9	Asan (Pereca) ...	Terminalia tomentosa	Combretaceæ	Big tree; wood extensively used and highly prized. Tusser silk tree.
10	Aura	Emblica officinalis	Euphorbiaceæ... ...	Medium tree, not exceeding 2 feet in diameter; used for building purposes; fruits edible.
11	Bael	Aegle marmelos	Rutaceæ	Big tree, attaining 3 feet in diameter; wood used for houses, windows, and door frames; fruits edible. Wood apple tree.
12	Bahira	Terminalia bellerica	Combretaceæ	Big tree, attaining 4 feet in diameter; wood light; fruits yield an oil, which is used medicinally.
13	Bans (Bukhar) ...	Bambusa stricta	Gramineæ	A small bamboo, used extensively and largely exported.
14	Bansa	Quercus dilatata	Cupuliferæ	Big tree; generally useful and much prized.
15	Baroon	Cræteva religiosa	Capparidaceæ	Tree of moderate size and rarely met with.
16	Baroonga	... ...	.....	Tree rarely met with; found in or near villages
17	Bauar	... ...	.....	Tree attaining 3 feet in girth; used for "jotes" for bullocks.
18	Bawat	... ...	.....	Small tree.
19	Belwa	Semicarpus Aanacardium ...	Anacardiaceæ	Marking-nut tree, attaining 1 foot diameter used for churns and butter utensils.
20	Bellonian	... ...	.....	Tree attaining 18 inches diameter; used in buildings, furniture, and bedsteads.
21	Béri	Casearia tomentosa.	.....	
22	Bijaya, Persar or Beea	Pterocarpus marsupium ...	Leguminosæ	Large tree; very valuable timber; much prised for all uses.
23	Bindoo	... ...	.....	Creeper; 4 to 6 inches in diameter; used sometimes in making ropes.
24	Bir	Ficus Benghalensis	Urticaceæ	Big tree; fruits edible.
25	Bire	Zizyphus Jujuba	Rhamnaceæ	Tree attaining 2 feet diameter; fruits edible; wood not used.
26	Birhool	... ...	.....	Big tree, 2 feet diameter; yields an oil.
27	Bürkhur	... ...	.....	Big tree, attaining 3 feet diameter; used for sword handles.
28	Buri Gambar	Gmelina arborica	Verbenaceæ	Medium tree.
29	Byro	... ...	.....	Big tree; used for ploughs.
30	Chumerberi	... ...	.....	Attains 1 foot diameter.
31	Dacdowl	... ...	.....	Small tree.
32	Dehri	... ...	.....	Ditto.
33	Dowie, Phul Dowi ...	Woodfordia floribunda ...	Lythrieæ	Small tree; used in the "hur" of the plough.
34	Dowta, Dhow	Conocarpus latifolia	Combretaceæ	Large tree; wood highly prized; hard and durable; generally useful.
35	Dumar, Gular	Ficus glomerata	Urticaceæ	Big tree; fruits edible; wood not used.
36	Dunbire, Dauras ...	Cassia fistula	Leguminosæ	
37	Durang	... ...	.....	Creeper; 9 inches in diameter.
38	Gambar	Gmelina arborea	Verbenaceæ	Big tree; used for making scales, dishes, palkis, wooden shoes, rice dishes.
39	Garso, Pohal	Albizzia Lebbek	Leguminosæ	Big tree; bark used for killing fish.
40	Gato	... ...	.....	Big tree; attaining 8 feet diameter; used sometimes for buildings and ploughs.
41	Ginyan	Odina Wodier	Therebenthaceæ ...	Big tree, attaining 5 feet diameter; used in extinguishing fires; also gunstocks.
42	Girhul	... ...	.....	Small tree; 9 inches in diameter; fruits edible; roots used medicinally.
43	Gorar	... ...	.....	Creeper; has a peculiar smell; used for killing fish.
44	Guggedhi	... ...	.....	Small tree.
45	Gulgul	Cochlospermum Gossypium ...	Bixineæ	Big tree; useless.
46	Gundiari	... ...	.....	Small tree.
47	Gurag	... ...	.....	Ditto.
48	Guri	... ...	.....	Big tree.
49	Guri karam	... ...	Rubiaceæ	Big tree; used for building, roofs, windows, and doors, &c.
50	Hurdy	Adina cordifolia	Rubiaceæ	Big tree; 2 feet diameter; used for bullock "jotes."
51	Hurré	Terminalia chebula	Combretaceæ	Big tree, attaining 4 feet diameter; used in building, also for roofs; fruits used medicinally.
52	Imli	Tamarindus indica	Leguminosæ	Preserved for the fruits' sake.
53	Jamti	Eugenia operculata	Myrtaceæ	Big tree; used generally for building; also for carts.
54	Jamun	Eugenia Jambolana	Mytaceæ	Tree; wood somewhat prized; used for "jummotes" in wells; fruits edible.
55	Kachnar	Bauhinia variegata	Leguminosæ	Big tree; fruits edible.
56	Kacksi	Ficus	Urticaceæ	Small tree; useless.
57	Kadahar	Artocarpus integrifolia ...	Ditto	Jack fruit tree; only seen about villages.
58	Kadamti	... ...	.....	Small tree; leaves used medicinally.
59	Kadmauli	Bauhinia tomentosa	Leguminosæ	Tree; 18 inches diameter; used for rope-making.
60	Kahua	Terminalia glabra	Combretaceæ	Big tree; wood hard; much prized for windows, ploughs, houses, posts, carts; generally useful.
61	Kaj, Kaji	... ...	Urticaceæ	Medium tree; 2 feet in diameter; useless.
62	Kakoor, Guti	Zizyphus Xylopyrus	Rhamneæ	Medium tree; useless.
63	Karam	Nauclea cordifolia	Rubiaceæ	Large tree; timber generally useful.
64	Karaunda	Carissa carandas	Apocyneæ	Tree; used for bullock "jotes."
65	Karaunji	Pongamia glabra	Leguminosæ	Big tree; found in or near villages.
66	Kari	Capparis aphylla	Capparideæ	At times big; sometimes used in building.
67	Keowti	... ...	.....	Small tree and seldom seen.
68	Katahul	... ...	.....	Medium tree; 2 feet diameter; fruits yield an oil.
69	Kathpan	... ...	.....	Small and rarely seen.
70	Katile	... ...	.....	Medium; fruits edible.
71	Kaunji	... ...	.....	Big tree; used medicinally; also for ropes.
72	Kókur	... ...	.....	Big tree; not used.
73	Khair	Acacia catechu	Leguminosæ	Very few big specimens seen; catechu; rice-pounders.

List of trees observed in Palamow State Forests.—(Continued.)

Current number.	Local name.	Systematic name.	Name of family.	REMARKS.
74	Khaur (Lapua) ...	Acacia ferruginea	Leguminosæ	Big tree; used for carts, windows, ploughs, houses.
75	Kierna	... ...	... ...	Small tree; useless.
76	Koinar	Bauhinia	Leguminosæ	Tree; leaves, fruits, and flowers edible (?)
77	Korea	Phyllanthus nepalensis ...	Euphorbiaceæ... ...	At times of some size; useless.
78	Kumbi	Careya arborea	Myrtaceæ	Big tree; timber not used; but bark used for firing native fowling pieces; used also for poisoning fish.
79	Kurhud	... ...	... ...	Medium tree.
80	Kurhur	Ficus Cunia	Urticaceæ	Medium tree; 2 feet diameter; used for the fastenings of bullock packs.
81	Kurkut	... ...	... ...	Tree; useless.
82	Kusum	Schleichera trijuga	Sapindaceæ	Large tree; yields best lac; timber prized for rice-pounders, oil and sugar-crushers.
83	Mahwa	Bassia latifolia	Sapotaceæ	Big tree; flowers used for preparing spirit; nut yields an oil; wood suitable for houses but never cut.
84	Lodh	Symplocos racemosa	Styraceæ	Small tree; yields a dye.
85	Maulan	Argyreia speciosa	Convolvulaceæ ...	Creeper; used for ropes; leaves used for dishes, also for firing guns.
86	Medh	Tetranthera laurifolia	Laurineæ	Big tree; bark used medicinally.
87	Mohun (Mouna) ...	... ...	... ...	Tree; fruits used medicinally and for poisoning fish.
88	Moonjnee	... ...	... ...	Small creeper; yields an oil.
89	Newar	Euonymus tingens	Celastrineæ	Tree.
90	Nim	Nelia indica	Meliaceæ	Big tree, not common; leaves prized.
91	Oodel	Sterculia villosa	Sterculiaceæ	Big tree; very rare.
92	Pakor	Ficus infectoria	Urticaceæ	Medium tree.
93	Panapoti	... ...	... ...	Moderate sized tree.
94	Panpar	... ...	... ...	Medium tree.
95	Panrar	... ...	... ...	Medium to big tree; fruits edible.
96	Paras	Butea frondosa	Leguminosæ	Big tree; yields lac.
97	Perar	... ...	... ...	Medium tree, fruits edible.
98	Phurhud	... ...	... ...	Three inches diameter; used for sword handles.
99	Piar	Buchanania latifolia	Anacardiaceæ	Large tree; fruits edible.
100	Pipur (Puki)	Ficus religiosa	Urticaceæ	Big tree; fruits edible.
101	Pirtool	... ...	... ...	
102	Pitour	... ...	... ...	One foot in diameter; useless.
103	Pokré	... ...	... ...	Small tree.
104	Popra (Pupurwut) ...	Gardonia latifolia	Rubiaceæ	Tree; 2 feet diameter; useless.
105	Poto	... ...	... ...	Medium tree; useless.
106	Poto Damun	Grewia vestita	Tiliaceæ	Tree; 1 foot diameter; used for furniture and bedstead.
107	Potwan	... ...	... ...	Nine inches diameter; used for killing fish.
108	Poro	... ...	... ...	Small tree.
109	Pukri	... ...	... ...	Ditto.
110	Purdowan	... ...	... ...	Medium tree; used for bedsteads and furniture.
111	Putta	... ...	... ...	Small tree; useless.
112	Rangpauan	... ...	... ...	One and a half inches diameter; useless.
113	Raten, Rater	... ...	... ...	Medium tree; useless.
114	Rohun	Soymida febrifuga	Meliaceæ	Medium tree.
115	Roweti	... ...	... ...	Small tree.
116	Ruri	... ...	... ...	Two feet diameter.
117	Ruttengurura	... ...	... ...	Two feet diameter; used for house building.
118	Sakwa	Shorea robusta	Dipterocarpeæ ...	Big tree; generally useful; yields a resin.
119	Sall, Sajwan	Boswellia thurifera	Ochnaceæ ...	Big tree; used for rice dishes; useless for fire-wood until after being cut two years.
120	Sanar	... ...	... ...	Tree; wood not much used.
121	Seeda	Lagerstrœmia parviflora ...	Lythrariæ	Big tree; bedsteads, chairs, "jotes," also in building.
122	Sij	Euphorbia Nivulia	Euphorbiaceæ ...	Found up to 2 feet in diameter; used for bird-lime.
123	Sikot	... ...	... ...	Nine inches diameter.
124	Simur, Pagun	Bombax malabaricum	Malvaceæ	Large tree; cotton tree; cotton used for bullock pads; wood used sometimes in building.
125	Sissir	... ...	... ...	Medium tree.
126	Sissoo	Dalbergia sissu	Leguminosæ	A few fine trees; generally prized.
127	Sonaputta	... ...	... ...	One foot diameter.
128	Sonnen, Ponnen ...	... ...	... ...	Medium; houses, bedsteads, &c.
129	Sumsihar	... ...	... ...	Small tree.
130	Surrookbedh	... ...	... ...	Two feet in diameter; gunstocks and buildings.
131	Totra	... ...	... ...	Medium tree.
132	Tewar	Bauhinia	Leguminosæ	Big tree; used in building.
133	Thaila	... ...	... ...	Small tree.
134	Then (Chirchiri) ...	Diospyros tomentosa	Ebenaceæ	Large tree; used for gunstocks, furniture, carts, and all purposes.
135	Tilai	Wendlandia exserta	Rubiaceæ	Small tree.
136	Tuni	Cedrela toona	Meliaceæ	Tree very rarely seen; used for gunstocks.

W. JOHNSTON,

Asst. Conservator of Forests.

W. H. D'C.—Regr. No. 4609—000—20-9-70.

FINANCIAL DEPARTMENT.

FORESTS.

CALCUTTA, THE 26TH SEPTEMBER 1876.

RESOLUTION.

READ—

The Progress Report of Forest Administration in Bengal for the year 1875-76.

The rapid progress which is being made in the development and working of the Forest Department in the Lower Provinces is shown by the increased importance attached in this report to the more advanced stages of forest conservancy. Two years ago, the principal work of the department consisted in the examination of forest tracts with a view to the formation of reserves. In the report of last year, the most prominent feature was the progress made in setting aside selected tracts as reserved forests. In the present report, though it appears that considerable further additions have been made to the reserved area, the topic of principal interest is the improvement and working of the forests, and in future years these sections of the report will be of still greater importance than at present.

2. The preliminary inspection work of the year has been confined to three tracts: the fir forests on the western boundary of the Darjeeling district, the forests of pergunnah Rhotas in the Shahabad district, and a block of sal forest in the Sonthal Pergunnahs. Of these, the two last have been gazetted as Government reserves after the close of the year. The fir forests in Darjeeling are not the property of Government, but belong to Cheeboo Lama; the timber is of inferior quality, and there are no facilities for transporting it, so that the tract could not, under any circumstances, be profitably worked. But it is of importance to check the denudation of these slopes on grounds connected with climate, with water-supply, and with the prevention of landslips. It is not proposed to take these forests under the direct charge of the department; but to use the influence of Government in inducing the proprietor to adopt some simple measures of conservancy. The forest tracts in pergunnah Rhotas and in the Sonthal Pergunnahs contain at present little mature timber, as the larger trees have been destroyed by indiscriminate cutting; but their situation makes it probable that they will prove extremely valuable hereafter, as there are excellent means of carriage both by land and water.

3. The forests still remaining for exploration in Bengal are of no great importance. It may be desirable to reserve some additional areas in the Chota Nagpore province. Of the other forests noticed in the 18th paragraph of the Conservator's report, the most considerable is the Mudhoopore jungle in Mymensingh; but no part of this is the property of Government.

4. The progress made during the year in the formation of reserved State forests is tabulated by the Conservator as follows:—

Divisions.	In square miles.			Remarks.
	Area at the beginning of the year 1875-76.	Area added during the year.	Total at the end of the year 1875-76.	
Darjeeling	106	.....	106	
Julpigoree	129	30	159	
Palamow	.....	151	151	
Sunderbuns	885	314	1,199	
Chittagong	347	223	570	
Singbhoom	.....	400	400	Rough estimate.
Total ...	1,467	1,118	2,585	

It will thus be seen that two new divisions, Palamow and Singbhoom, were formed in course of the year, and that the reserved area was increased by 1,181 square miles. These figures do not include the Shahabad and Sonthal Pergunnahs reserves, which were gazetted after the year had closed.

5. In the Julpigoree division the Apalchand reserve, of 30 square miles, was gazetted in September 1875. It is situated on the left bank of the river Teesta, about 15 miles above the town of Julpigoree. The forest consists principally of sal, sissu, and khair: there is a great demand for timber in the neighbourhood, and any surplus can readily be floated down the Teesta to the Berhampooter. The details of the working plan of this reserve have not yet been completed.

6. The Palamow reserve was gazetted in August 1875. A detailed account of this reserve, with a list of the trees found in it, is given in Appendix A to the Conservator's report. The greater part of the tract is covered with sal forest, but there are at present few trees of large dimensions, and the reserve will require a rest of some years before any regular system of cutting can be introduced. There is convenient water-carriage for the produce of this reserve by means of the river Koel, which falls into the Ganges not far from the town of Arrah.

7. In the Soonderbuns division an additional block of 314 square miles was gazetted in August 1875, principally with the object of obtaining a well-defined natural boundary for the reserved tract. But the experience of a few months showed that this object could not really be attained unless the Soonderbuns of the Satkhira sub-division in the 24-Pergunnahs were added to the reserve, and this was accordingly done after the close of the year The Conservator has recommended that the whole of the unleased area of the Soonderbuns should be placed under the Forest Department, and such a measure would no doubt make the duty of protection and supervision easier than it is at present. But the Lieutenant-Governor is of opinion that the public convenience requires that the reserved tract should be limited to the smallest area compatible with the effectual preservation of the valuable soondri timber: and he would be unwilling to enforce any restrictions which are not shown to be necessary to the accomplishment of this object. It is therefore probable that no further additions will be made to the reserved area in the Soonderbuns.

8. In the Chittagong division, the Metamahari reserve of 223 square miles was gazetted in June 1875. The two most valuable trees in this reserve are the gurjan and the jarul, both of which species were in imminent danger of extinction from reckless cutting. The forest produce of the reserve will be taken down the Metamahari river to the regulation district of Chittagong; but a detailed working plan has not yet been prepared.

9. A new division has been formed in the Singbhoom district of the province of Chota Nagpore, consisting of about 400 square miles of the Government estate known as Sarunda Pir, situated between the Brahminee and Byturnee rivers. The reserve was gazetted in August 1875. The principal tree is the sal, and as the forest has not been much injured by cutting in past years, an immense number of magnificent specimens of this tree are to be found in the reserved area. There is not at present much local demand for timber, but there is water communication with Cuttack, and as the reserve is situated on a straight line between Calcutta and Bombay, it may hereafter become extremely valuable in the event of direct railway communication being opened between those two places. The demarcation of this tract has not yet been completed.

10. Under the heading of protection and improvement the Conservator reports that 30 prosecutions were instituted during the year against 73 persons. In 22 cases convictions were obtained against 41 persons, seven cases were dismissed, and one was pending at the close of the year. In the Soonderbuns reserve many cases in which the rules were infringed were suffered to pass without the prosecution of the offenders, as in past years the forests have been open to the public, and the Conservator was anxious that the new regulations should not be enforced in any way which might produce

inconvenience or hardship to the boatmen and wood-cutters engaged in the traffic. The orders of the Conservator on this point have the entire approval of the Lieutenant-Governor.

11. It is remarked in the report that a special Forest Act for Chittagong is still under consideration. But it is understood that the Government of India have it in contemplation to amend Act VII of 1865 by an enactment which will be of general application; and if this is done, it will not be necessary to pass a special law for Chittagong.

12. Considerable progress has been made during the year in the demarcation of boundaries, especially in the Julpigoree and Chittagong divisions. The measures taken for the protection of the forests from fire were only partially successful, a result which is attributed to the specially dry weather which prevailed during the early months of 1876. In the Darjeeling division, the clearing of a fire-path 50 feet broad, and the employment of special patrol parties, proved ineffectual to protect the Sivok and Muraghat forests. The extreme difficulty of saving plantations from destruction by fire in dry weather is graphically illustrated by an anecdote given in the report, which describes how a nursery in the Bamunpokri plantation in Darjeeling was entirely destroyed by a burning leaf, which dropped upon it in the presence of three officials of the Forest Department, whose utmost efforts were unable to master the conflagration which immediately burst forth.

13. Several new roads have been constructed during the year in the Julpigoree and Darjeeling divisions. In Palamow it is stated that the existing roads are sufficient, and in the Soonderbuns and Chittagong the communication is by water. A number of rest-houses have been erected for the accommodation of officers in charge of the reserves, and for the reception of inspecting officers on tour. The total expenditure on buildings and offices amounted to Rs. 3,913.

14. The area of the plantations has been increased from 427 acres to 490 acres during the year. The teak plantations in Chittagong are reported to be very promising. An important experiment is being made in the Darjeeling division, in the rearing of a number of seedlings of the *ficus elastica*, which are stated to be doing well. A small bamboo plantation has been laid out in the same division by order of Government, with the object of ascertaining whether the bamboo can be successfully cultivated as a material for the manufacture of paper. In the Soonderbuns an area of 100 acres has been set aside for the experimental cultivation of the baobab, but the seedlings were not actually planted till after the close of the year under review. The Deputy Conservator expresses some doubt whether the locality will be found suitable for a fair trial of the experiment.

15. The paragraphs of the report which treat of the yield of the forests show that 77,296 cubic feet of timber were brought to depôt during the year, against 54,320 cubic feet in the previous year. There was, however, a falling off in the quantity sold, owing to the fact that most of the timber removed from the Buxa reserve reached the depôt towards the close of the year. It is satisfactory to find that the net profit to Government on timber sold has increased in the Darjeeling division from 5 annas 10 pie to 6 annas 3 pie, and in the Julpigoree division from 6 annas 11 pie to 9 annas 4 pie per cubic foot. A large number of narrow-gauge sal sleepers were supplied from the Darjeeling division to the Northern Bengal State Railway. The Government timber operations were confined to the three divisions of Julpigoree, Darjeeling, and the Soonderbuns; but besides these a large quantity of material in the above three divisions and in Chittagong was removed from the forests by private persons under licenses and on payment of fees. In Palamow no working operations were undertaken, as the forests require rest; but there were some small receipts on account of minor forest produce.

16. The plan which has been adopted for the management of the Soonderbuns division is described in detail in the report. Seven revenue stations were established, but this number proved to be insufficient, and three more

stations have since been added. Boats entering the reserve for the purpose of removing forest produce are required to take out permits at the station, and to pay tolls according to the maundage of the boat and the description of material taken. The first permit was issued on the 11th December 1875, and the full number of seven stations was not completed till the 5th February 1876; so that the division was actually in working order for only about two months of the year. But the returns show that during this period 4,528 permits were issued to 5,321 boats; and that 16,43,434 maunds of forest produce were removed, the tolls upon which amounted to Rs. 29,000. Three-fourths of the whole quantity of produce consisted of firewood.

17. The tolls in the Soonderbuns have purposely been fixed at very low rates. The preservation of the soondri forests was the principal object with which the reserve was formed, and the rate on this wood is one anna per maund; but for all other descriptions of timber, fire-wood and minor produce, the toll is only one pice per maund. It appears from the returns that two-thirds of the entire receipts were derived from boats belonging to the Jessore district; but no doubt a large proportion of the produce was subsequently exported. Boats from Backergunge took 14,715 maunds of soondri timber, most of which was probably used for boat-building.

18. The receipts and expenditure of the year as conpared with those of 1874-75 give the following results:—

	Receipts.	Expenditure.	Surplus.
	Rs.	Rs.	Rs.
1874-75 ...	1,85,914	98,654	87,260
1875-76 ...	1,98,274	1,39,086	59,188

It would thus appear that in 1875-76 there was an increase of Rs. 12,360 in the gross receipts, but that the expenditure increased by Rs. 40,432; so that the net surplus of the year was much smaller than that of 1874-75. These figures, however, which are only those of cash receipts and payments, do not correctly represent the real financial result of the operations of the department during the year. The actual value of the year's transactions, which is found by excluding from the account all items not properly belonging to the year, was Rs. 1,93,609, and the real cost of the year's transactions, calculated on the same principle, was Rs. 1,40,026, giving a balance of Rs. 53,583. To this is to be added a sum of Rs. 39,329, being the difference between the value of the stock in hand at the beginning and at the close of the year, and the net result of the year is thus shown to be Rs. 92,912, being an increase of Rs. 265 upon the net result of 1874-75, which was Rs. 92,647. The large increase in the value of the stock in hand is due partly to timber brought to depôt in the Julpigoree division, and not disposed of, and partly to the purchase of seven elephants during the year. There was a profit during the year on the operations of all the divisions except Palamow, in which (as has already been explained) it was not thought advisable to work the forests.

19. The Conservator anticipates that the surplus will rise to about Rs. 1,50,000 in the course of the next two years, but that much more than this cannot be expected for some time to come. The receipts for the current year in the Soondurbuns are estimated at Rs. 60,000, but there will be some necessary increase of expenditure.

20. The Lieutenant-Governor cannot close this review without again adverting to the remarkable development which the department has shown in the course of the last two years. At the end of the year 1873-74, the separation of the province of Assam had removed from the administration of this Government the principal tracts which were then under the charge of the department. There remained only the two divisions of Cooch Behar and Chittagong, and the entire reserved area amounted to a total of only 120 square miles. The present report shows six divisions already established, with a reserved area of 2,585 square miles. Five of these divisions are being worked at a good profit on the expenditure, and in future years a still larger surplus may be confidently looked for. But the immediate

pecuniary returns are of small importance, compared with the permanent benefit which these provinces will derive from the judicious protection of their principal forest areas. The primary work of the department is to afford this protection, and thereby to ensure a continuous supply of timber and other forest produce, which would speedily be destroyed if the consumption of it were altogether unchecked. It is perhaps not too much to say that there is no branch of the public service which confers a greater direct benefit on the country than the operations of the Forest Department.

21. The Lieutenant-Governor cordially acknowledges the energy and ability with which the Forest Department in Bengal has been administered by the Conservator, and he is glad that Dr. Schlich's services have lately been recognized by his promotion to a higher grade. The subordinate officers of the department are favourably noticed in the report. The Deputy Conservator, Mr. Home, deserves much credit for his efficient management of the difficult duties of the Soonderbuns division; and Mr. Johnston, Assistant Conservator, rendered good service in the examination of the new reserves in Shahabad and in the Sonthal Pergunnahs.

By order of the Lieutenant-Governor of Bengal,

H. J. REYNOLDS,

Offg. Secy. to the Government of Bengal.

No. 3125.

COPY, with 25 copies of the Report, forwarded to the Conservator of Forests for information.

No. 1326.

COPY, with 400 copies of the Report, submitted to the Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce.

No. 1327.

COPY, with a copy of the Report, forwarded to the Commissioners of the Cooch Behar, Chittagong, Chota Nagpore, Patna, Bhagulpore, and Presidency Divisions; also to the District Officers of Julpigoree, Darjeeling, Chittagong, Singbhoom, Lohardugga, Shahabad, Sonthal Pergunnahs, 24-Pergunnahs, Jessore, and Backergunge.

By order of the Lieutenant-Governor of Bengal,

H. J. REYNOLDS,

Offg. Secy. to the Govt. of Bengal.

CALCUTTA,
The 26th September 1876.

W H.—Reg. No. 7032—27-9-76.

No. 1211 F.

FROM

THE HON'BLE T. C. HOPE,

Offg. Secretary to the Government of India,

To

THE SECRETARY TO THE GOVERNMENT OF BENGAL.

Department of Revenue, Agriculture, and Commerce.

Forests.

SIMLA, *the 27th November* 1876.

SIR,

I AM directed to acknowledge the receipt of the annual report on forest administration in Bengal for 1875-76, together with a review by His Honour the Lieutenant-Governor, and to state that in the opinion of the Honourable the President in Council the progress reported in forest administration in the Lower Provinces of Bengal has been satisfactory.

2. It is reported that at the close of the year the aggregate area of the demarcated reserves was 2,585 square miles, of which a considerable proportion was sâl-producing forest, and that a further area was added after the close of the year. In paragraph 21 of the report Dr. Schlich states his opinion that the area of the sâl forests will finally be increased to 1,200 square miles, if not to more. This result is much more satisfactory than was expected a few years ago. The demarcation of the reserved forests has not yet been completed, but so much is clear from the report that the areas which remain to be added in future years will not be very considerable.

3. This like the last three annual reports of forest administration in Bengal, gives evidence of the great care and intelligence bestowed upon the selection of the areas which have now been constituted the Government forest domains, and I am directed to convey the acknowledgments of the Honourable the President in Council to His Honour for the energetic and well directed measures which have resulted in placing the forest property of the State in the Lower Provinces of Bengal upon a safe and in every respect satisfactory footing. His Honour in Council is glad to observe from the orders of the Bengal Government on the report that His Honour the Lieutenant-Governor has been efficiently supported by Dr. Schlich, the Conservator.

4. It is correctly said in paragraph 1 of the orders of the Bengal Government that the topic of principal interest will in future be the improvement and working of the forests. Fire protection has not been successful during the year under review. Circumstances are exceptionally difficult in the Sub-Himalayan forests of Bengal, but the Conservator must persevere in this important work, and the Honourable the President in Council has no doubt that he will succeed. What is said in paragraph 106 of the report regarding the unsoundness of the trees which have grown up in forests burnt annually, shows that Dr. Schlich appreciates the great advantage of fire conservancy in these forests.

5. The progress reported in paragraphs 62 to 68 in road-building and the erection of rest-houses for the establishment is satisfactory; every effort should be

made to facilitate the inspection, protection and working of the forests by a system of well-planned roads, and to secure the health and comfort of the officers and the subordinate establishments by providing them with shelter in and near the forests.

6. The plantations of the Forest Department in Bengal have necessarily as yet been of an entirely experimental character. The Government of India does not regret the large outlay incurred upon them, for, provided they are used to study the mode of growth and the treatment required by the different kinds of trees, they will be of the highest value.

7. The Conservator's remarks in paragraphs 98 and 113, recording the steps taken by him in order to test the suitableness of different kinds of timber as railway sleepers, have been read with interest. The attention of the Railway authorities in Bengal should be drawn specially to this subject, and they should be requested to arrange for a periodical examination of the sleepers, and to keep systematic registers recording the state in which they are found to be at each examination. The Conservator should suggest to the Railway authorities an efficient mode of branding their sleepers, and copies of the periodical inspection reports should be sent to him. Every facility should also be given to Forest Officers to examine the sleepers of other kinds of wood laid on the line.

8. In paragraph 101 the great waste of timber in cutting sleepers for the Northern Bengal State Railway is mentioned. It will be well to include in future reports a detailed statement of receipts and charges on account of any large transactions with the State Railway and other Public Departments, with an account of the amounts which would have been realized and expended if the timber had been sold to private persons. It is most desirable that the Forest Department should supply the Railway and other Public Departments with the timber they require, but the amounts paid for such timber must not be less than what might be realized if it were sold in the open market.

9. The receipts and charges for the year, as compared with those of 1874-75, have been as follows :—

		1874-75. Rs.	1875-76. Rs.
Receipts	... ...	1,85,933	1,98,274
Charges	A	39,062	68,255
	B	60,341	70,831
	Total ...	99,403	1,39,086
	Surplus ...	86,530	59,188

And the transactions of the year exhibited under the great main heads of Revenue and Expenditure have been as follows :—

	Receipts.	Rs.	Charges.	Rs.
I.—Departmental timber operations.	I, 1 and 3 ...	57,633	I, 1 and 3; half of VIII, IX and B.	73,751
II.—Other Revenue ...	I, 2; II; III and IV	1,40,641	I, 2; II; X; quarter of VIII, IX and B.	22,849
III.—Formation, protection and improvement of forests.	.....	...	III; IV; VII; quarter of VIII, IX and B.	42,486
TOTAL ...		1,98,274		1,39,086

The Conservator of Forests should be requested in future reports to give a brief analysis of the receipts and charges in the manner here indicated.

In paragraph 130 of the present report, the Conservator compares the financial results of the last five years, which shows a slow but steady increase in the gross receipts. The Honourable the President in Council trusts that this increase will continue, and that in the working of the Department the utmost economy will be pursued compatible with efficiency.

I have the honour to be,

SIR,

Your most obedient Servant,

T. C. HOPE,

Offg. Secretary to the Government of India.

No. 309, dated the 20th February 1877.

From—The Officiating Secretary to the Government of India,

To—The Secretary to the Government of Bengal.

WITH reference to the second statement in paragraph 9 of the letter from this Department, No. 1241, dated the 27th November 1876, reviewing the Annual Administration Report of the Forest Department in Bengal for 1875-76, I am directed to forward herewith a modified statement showing the transactions of the year under the great main heads of Revenue and Expenditure, and to direct that it be substituted for that entered in the letter above referred to.

2. The Governor General in Council is aware that the distribution of the Establishment charges among the three great heads of,

I—Departmental timber operations,

II—Other Revenue, and

III—Formation, protection, and improvement of the forests, in order to be accurate, would require to be made in detail for the different divisions, and it will be useful if in future Annual Reports the Conservator will endeavour to give an approximate distribution of the Establishment charges under the great heads here indicated.

	RECEIPTS.	Rs.	CHARGES.	Rs.
I.—Departmental timber operations.	I—1 and 3 ...	57,633	I—1 and 3; half of VIII and IX, and one quarter of B ...	56,043
II.—Other Revenue ...	I—2; II; III and IV...	1,40,641	I—2; II; X; quarter of VIII and IX, and half of B ...	40,557
III.—Formation, protection, and improvement of forests	...	...	III; IV; VII; quarter of VIII, IX and B	42,486
TOTAL ...	...	1,98,274	TOTAL ...	1,39,086

N.-W. PROVINCES.

ANNUAL PROGRESS REPORT

OF

FOREST ADMINISTRATION

FOR THE YEAR 1875-76.

By J. E O'Callaghan, Esq., Conservator of Forests, N.-W Provinces.

STATISTICAL DATA AND FOREST LEGISLATION.

INTRODUCTION.

The statistical data were given in previous annual reports, and there is nothing new to add to them.

2. **Forest Legislation.**—A set of new forest rules were published by the Government of India on the 21st of September, 1875, and have been, or are being, brought into force in all the forests of the north-west.

I.—STATE FORESTS AND LEASED FORESTS.

SECTION 1.—Area, Boundaries—Descriptive Account.

SECTION 2.—Requirements of the surrounding Population—Prescriptive Rights.

FIRST PART—SPECIAL.

3. **Naini Tal Sub-Division.**—Here all the forests are reserved, but as the areas have not been computed or the boundaries gazetted and as many very important rights have still to be decided about, the book of reserves has not yet been opened. The boundaries have all been demarcated, and only a few pillars are now necessary which will be erected in 1876-77. Since the end of 1875 the fuel requirements of the Commissariat for the Naini Tal Convalescent Depôt have been met from this Subdivision and in deference to village rights five sál and 413 chír trees were given free.

4. **Kumaun Bhabar Division.**—Here also all the forests are reserved, but no progress has been made in the register of reserves, as the northern boundary has only just been demarcated. Moreover, the question of the "blocks" is not yet settled, and until this is done it will not be easy to commence the register. The northern boundaries decided upon last year have been insured by masonry pillars. Nearly all the villages in the northern part come under the Kumaun Settlement in which their rights are laid down. Generally these need not be interfered with, though special cases may be taken up when necessary for the protection or improvement of first-class forests.

5. **Ranikhet Sub-Division.**—Here, too, all the forests are reserved. Mr. Pengelly collected data for and drew up a rough sketch generally of the proposed register of reserves, but did not find it possible to make further progress with it this year. Consequent on the frequent destruction or removal of their serial numbers the Commissioner placed the boundary pillars under charge of the patwáris, and the villagers are in future to make good any damage done to them.

Within the forests, and situated where it has long been wished to form a "closed reserve" stands the village of Jakhdeo, which, with all its "rights," has been purchased by the Department. Its importance must not be estimated by its area, but by the fact that all rights there having lapsed, cattle and fires can be more strictly excluded

than from other forests in the sub-division. Government has also sanctioned (since the year closed) other village rights being bought up near to the cantonments to form a "closed reserve" there, as in addition to the wants of the surrounding population this sub-division has to supply timber and fuel to the military. Such closed reserves are absolutely necessary to save village rights being interfered with hereafter.

In satisfaction of village rights, one alder, 19 sál, 867 oak, 97 rhododendron, and 5,883 chír trees were given free to the inhabitants during the year.

6. **Garhwal Bhabar Division.**—The northern boundary settled in the previous has been insured during this year by the erection of 32 serially numbered pillars, and the rights of the villagers have been defined ; but the areas within which they may be exercised having yet to be determined, it was not found possible to prepare the register of reserves. The Kumaun flat on the Ganges has been excluded from forests and given up to cultivation.

7. **Dehra Dun Division.**—All forests in this division are reserved ; the following is a list of them. As the areas were supplied by the Forest Branch they may be relied upon.* One or two small tracts remain to be added after the issue of the new forest maps :—

		Areas in square mile.
	Western Dehra Dún.	
1.	North slope of Sewáliks...	77·27
2.	Dhulkote ...	7·94
3.	Chandpúr ...	3·38
4.	Ambari ...	6·40
5.	Mándi Rampúr ...	1·54
	Eastern Dehra Dún.	
6.	North slope of Sewáliks ...	104·58
7.	Nagsidh ...	25·38
8.	Thano ...	9·42
9.	Tirsal ...	14·52
10.	Sainkote ...	14·08
	Saháranpur District.	
11.	South slope of Sewáliks ...	274·01
12.	Patri Forest (leased to Roorkee Workshops) ...	21·77

Though very nearly all data from which to complete the register of reserves have been collected, it has not yet been opened in this division, and the greater accuracy which will be obtained by waiting for the forest survey sheets, was deemed a valid reason for one season's delay.

The question of Major-General Showers' boundaries, which was unsettled at the close of 1874-75, has been unmistakably disposed of during this year. Both at the 20 acres' lot assigned for the erection of a residence and at the 2,000 acres "grant," final and well defined lines have been cut.

No survey has yet determined the area or boundaries of that portion of the Tehree Rájah's leased forests attached to this division.

8. **Jaunsar Division.**—Here, again, there are no unreserved forests. As regards reserved, the following progress has been made:—1st, their boundaries have been surveyed and finally insured by pillars; 2nd, they have been placed under the new forest rules and gazetted as "open" and "closed" forests ; 3rd, most of the rights with which they are burdened have been ascertained ; 4th and last, the greater part of their areas have been divided into blocks to systemize management.

* NOTE.—Since writing in this strain a letter from the Superintendent of Forest Surveys, No. 230, dated 25th July, 1876, says that "these areas are not to be considered as final results, but are subject to correction hereafter."

Notwithstanding all which, however, it was not found possible to prepare maps and open the register of reserves within the year.

The forests of the division are :—

		Acres.			Acres.
1.	Danau ...	... 3,444	15.	Dissau ...	... 88
2.	Bharam ...	... 2,762	16.	Bamtár ...	... 330
3.	Missau ...	... 3,633	17.	Bangawn ...	... 7
4.	Kailo ..	.. 7,433	18.	Soli ...	... 301
5.	Lakau ...	... 7,210	19.	Korú ...	... 84
6.	Báwar ...	... 23,970	20.	Phirtar ...	... 38
7.	Deogar ...	... 9,380	21.	Lakwar ...	... 73
8.	Huripur Bias	... 1,500	22.	Thaplar ...	... 62
9.	Panj-gawn	... 2,187	23.	Uperli Atgawn	... 1,507
10.	Bánà ...	... 2,200	24.	Bondar ...	... 14,278
11.	Bissáhil ...	... 2,540	25.	Bislar ---	... 5,350
12.	Silgawn ...	... 258	26.	Dúár ...	... 1,927
13.	Atgawn Chando	... 44	27.	Mohna ...	... 1,625
14.	Maletha ..	... 3	28.	Bailar ...	... 43

and in addition, about 500 square miles of forest, leased from Garhwál and Bussahir, are attached to Jaunsár.

To meet the rights of villagers, there have been granted during the year 1875-76 :—

Green deodar trees	...	247	Green oak trees	...	110
Dry deodar pieces	...	13,196	„ fir „ ...	...	45
„ chír „	...	275	„ cypress „ ...	...	3
Green kail trees	...	214	„ sál „ ...	...	7
„ chír „	...	370	„ ginthi „ ...	...	1

9. **Bhagirathi Division.**—All the forests of this division are leased and in an independent State, so that a register of reserves would be unsuitable. During 1875-76, the following trees were granted to the Rájah's subjects for household and agricultural purposes:—55 tún, 64 daral, 2 green deodar, 257 dry deodar, 101 chír, and 48 morinda. From which and from the timber used by them in the Jaunsár division, it is apparent that the hill men are gradually being induced to spare green and utilize dry wood.

10. **Gorakhpur Division.**—All forests in this division are State, and reserved as follows :—

1.	Nagwa ...	... 12,080	7.	West Lehra	... 10,880
2.	Sonari ...	... 24,480	8.	Rámgarh ...	... 4,960
3.	Bhari Baisi	... 6,080	9.	Tilkonia ...	... 1,600
4.	Bhilampur ...	... 1,920	10.	Banki ...	... 2,240
5.	Dudhai ...	... 8,320	11.	Jagpur ...	... 106
6.	East Lehra...	... 7,040		Total acres	... 79,706

Mr. Grant reports that the fixing of forest boundaries resting principally with the revenue authorities, he has not been able to complete his demarcations, but that last year's disputes at Sonari, Dudhai, and Tilkonia, have all been settled; he does not, however, state whether a revival of them has been guarded against by the erection of pillars. No register of reserves has yet been prepared.

SECTION 3.—PROTECTION.

11. **Naini Tal Sub-Division.**—Mr. Braidwood, beside the Conservator's office, has charge of this sub-division. The old protective establishment has, under sanction, been slightly altered since last year, and now consists of two rangers @ Rs. 12 each,

one muharrir @ Rs. 10, and 11 patrols @ Rs. 6 each, amounting to Rs. 160 per mensem, or Rs. 15 a month more than formerly. This increase was indispensable owing to the proximity of a large sanatarium. Beyond petty fines and confiscations imposed by the forest officer himself there have been no prosecutions.

12. **Kumaun Bhabar Division.**—Captain Campbell held this division throughout the year. The protective establishment was the same as in the previous year. There were 159 cases, chiefly for evading the payment of duty on forest products, in which 565 persons were involved, and convictions were obtained in 143 cases involving 539 of them.

13. **Ranikhet Sub-Division** – Has been under charge of Mr. Pengelly the whole year, during some months of which he was assisted by Mr. Dansey. There was only one case, an important one of criminal breach of trust. The Assistant Commissioner and Cantonment Magistrate sentenced the accused to six (6) months' imprisonment with hard labour. He appealed to the Commissioner, and, without any notice to the forest officer, was released. Against this Mr. Pengelly, in turn, appealed to the Local Government which decided not to pursue the matter. There was no alteration in the protective establishment during the year.

14. **Garhwal Bhabar Division.**—Mr. Amery was in charge of this division throughout the year, assisted during the working months by Mr. Dansey. The protective establishment was in no way altered. There were 16 cases which involved 25 persons, and convictions were obtained in 13 cases involving 14.

15. **Dehra Dun Division.**—Mr. O'Callaghan held this division throughout the year, assisted by Mr. Down and Sub-Assistant Conservator Sheikh Mohi-ud-din, but the latter was not present during the working season, as he had to take leave on medical certificate. The protective establishment remained as in the previous year. There were eight prosecutions involving 32, and eight convictions which involved 31 persons.

16. **Jaunsar Division**—Was under charge of Mr. Bagshawe, assisted by Messrs. Rind and Palmer, and for a short time by Mr. O. Greig. There was no change in the protective establishment. There were 14 cases involving 30, and 13 convictions involving 29 persons, while one case is yet pending.

17. **Bhagirathi Division.**—Mr. O'Callaghan held charge of this division also throughout the year. The protective establishment was reorganized without changing any of its members, and is now one Chief Ranger @ Rs. 24, one Ranger @ Rs. 20, two Patrols @ Rs. 8 each, one Patrol @ Rs. 7, and two Patrols @ Rs. 6 each, amounting to Rs. 79 per mensem, being Rs. 2 a month less than formerly. Improved supervision is anticipated, consequent on two of these posts being sufficiently well paid to induce the incumbents to value their situations. There was one prosecution, and one conviction, each involving three persons.

18. **Gorakhpur Division.**—Mr. Grant, with an unchanged protective establishment, held charge of this division through the year. There were six prosecutions, and six convictions, each involving 14 persons.

SECTION 4.—MANAGEMENT AND IMPROVEMENT.

19. **Naini Tal Sub-Division.**—Some 22 miles of fire lines, from 40′ to 100′ wide, were burnt in January, at a cost of Rs. 139, and 15 watchers were placed upon them from the 1st of February to the 31st of May. When these lines were being burnt the fire broke across them in three places ; two of these were devoid of trees so no harm was done ; at the other place some young trees were destroyed. In June there occurred six fires in the forests, more or less destructive. One, the most destructive, was caused by some sawyers who, in spite of strict orders to the contrary, kindled a cooking fire. These men and the contractor employing them were heavily fined. A second was started by two artillery men out shooting, and though the men

were paraded it was impossible to identify them. The remaining four were lit by villagers, and as they have been always in the habit of burning off the old to obtain the new grass for their cattle, it will not at first be an easy matter to induce them to forego the custom. These cases are being investigated by the Assistant Commissioner.

9¼ miles of inspection paths three feet wide have likewise been made at a cost of Rs. 380. When on the outskirts of forests, these also will serve as fire lines, from the outer edge of which the grass may be fired.

In some selected sites Mr. Braidwood has sown acorns and deodar seed with moderate success, and though it is too soon to judge of this work, he deserves great credit for the keen interest he takes in it and the energy with which he carries it on. Under his charge a more methodical system has been introduced into this sub-division; the charcoal burning has been controlled and regulated; the potato cultivation has been checked where advancing into forests; ranges and beats have been arranged, and a ticket scheme laid upon the Naini Tal jhampanies, which will go far to preserve the forests and increase their revenue.

20. **Kumaun Bhabhar Division.**—In this division fire conservancy has again been a success. The 11 square miles 59 acres included in the permanent lines last have been preserved through this year, while another 40 square miles have also been included and protected. Nearly all that block of forest near Mohan and west of the Kosi river, which it is proposed to defend from fire, has now been brought within conservancy lines, 15,319 cubic feet of various timbers have been obtained in clearing these lines, all that was first-class having been taken to depôt by the Department, while exporters were allowed to remove inferior qualities on payment of a royalty. There are now 64 miles of fire lines of which 27 have been cleared, and from those yet to be cleared quantities of timber may be provided during the next two years.

119,840 creepers were this season cut in the fire conserved forests by rangers and patrols, the most flourishing sections being first entirely freed from them. Neither sowing nor planting was undertaken, but careful attention was bestowed upon the natural reproduction of sál.

7½ miles of the Nindhar valley cart road have been almost completed, and existing roads were kept in good repair.

21 **Ranikhet Sub-Division.**—As the basis for a preliminary working plan of the closed reserve, alluded to in paragraph 5 of this report, Mr. Dansey, Assistant Conservator, made a valuation survey of the forests near Ránikhet during last rains; this will now be valuable.

Since the 1st of April, 1876, a different system for supplying the Commissariat Department with fuel has been adopted. It is to be carried out for six months as an experiment, and consists in having abolished the weighing of fuel by the Forest Department and letting the royalty be paid according to the issues to barracks, the rate having been raised from one anna (0-1-0) for 100 lbs. to one anna (0-1-0) for 82 lbs., or the Government maund. This reduction in quantity is supposed to cover loss by drying, cutting up, and other adverse contingencies. But the first six months can hardly give a reliable result, as there was on hand, to commence with, a stock for three months.

As soon as Jakhdeo was purchased by the Department the work of planting it was promptly begun. 24,700 walnuts and 6,000 horse chestnuts were set out in the upper portion of it last January and February, and the lower portion is to be taken in hand with gums and acacias this rainy season. At Garkhet also, 3,860 walnuts and 4,000 horse chestnuts were put down. *Pinus Longifolia* would also have been sown freely had it not proved a barren year for chír seed. There was not even enough to meet indents. On sowing and planting and having reference to the requirements

of the surrounding population, Mr. Pengelly writes :—"It seems to me that in several parts, such as the country from Durmád bridge to Dwaraháth, there are many denuded hills which might with advantage be clothed with forest. This would be a positive gain to the villagers, for with proper management they would still have sufficient grazing ground, and then also building timber and fuel close by, instead of, as now, having to bring all the former at least from a long distance."

The plantations were all enclosed at a cost of one rupee for every 114½ running feet of fencing, and, as a rule, are doing well, but in some places the walnut plants have suffered a good deal. Mr. Pengelly attributes the damage to porcupines and hares, as the chief injury consists in the terminal bud having been bitten off.

The subjoined report by Mr. Craw will show what further has been done in this locality and during the year under review, in sowing, rearing, and transplanting.

2. The sowings during the year consist of the following seeds, *viz.* :—

	No.	Weight.		Source.
		Maunds.	Seers.	
Apricot, ...	...	2	4	Local.
Cherry, ...	...	...	2½	"
Plum, ...	...	...	26	"
Pear	...	...	6	"
Alder	...	...	8½	"
Oak	...	22	...	"
Deodar	...	5	20	"
Walnut, ...	54,000	...	...	"
Magnolia, ...	...	...	2½	F Dept., Darjeeling.
Acacia, ...	...	...	15	Australia.
Eucalyptus Globulus, ...	...	...	12	"
" Marginata, ...	...	...	2½	"
" Sideroxylon, ...	...	...	2	"
Sweet chestnut, ...	...	...	1½	Botanical Gardens, Saháranpur.
" " 1 case	...	...	...	" " Howrah, Calcutta.
" "	...	...	10	Museum, India Office, London
" "	...	2	30	" " " "

3. The 10 seers of sweet chestnut from the Museum, India Office, London, were contained in five small parcels marked and packed as follows, *viz.* :—

Bag $\frac{A.}{A.}$, contained 106 seeds, each seed wrapped in lumberhand paper.

" $\frac{A.}{B.}$, contained 98 seeds, each seed wrapped in blotting paper.

" $\frac{A.}{C.}$, contained 89 seeds, each seed wrapped in silver paper.

Box $\frac{A.}{D.}$, contained 42 seeds, packed in kiln-dried loam.

" $\frac{A.}{E.}$, contained 41 seeds, packed in kiln-dried loam.

4. These seeds, on arrival, were a good deal worm-eaten, rotten, and generally light. They were sown the 11th February, 1876, in well-prepared, well-drained beds of sandy loam facing north-east, but up to the present time not a single seed has germinated. On the other hand, the results from the three large cases containing two maunds and 30 seers have been very satisfactory. These cases arrived the 22nd, 23rd, and 24th February, 1876, were immediately unpacked, the seeds sorted, and all sown by the evening of the 24th February, under conditions, as regards soil, drainage, and situation, similar to the seeds contained in the five small parcels; and to date in all 1,068 seeds have germinated.

5. The cases were marked and the seeds packed as follows :—

No. 1 *A. H. D.*—This case contained 1,640 seeds, packed in kiln-dried loam. 1,140 seeds were separated from the bulk as apparently good seeds, but of this number only 287 have at present germinated.

No. 2 *A. H. D.* contained 1,918 seeds, packed in kiln-dried loam ; 1,542 seeds were apparently good, and of this number 636 have germinated.

No. 3 *A. H. D.* contained 1,788 seeds, packed in kiln-dried loam ; 1,082 seeds were apparently good, and 141 have germinated.

The faulty seeds from all three cases were sown in a separate bed, and have produced four plants.

These results contrast favourably with those obtained from the consignment of January, 1875, which produced in all 166 plants only, *viz.* :—

10	Plants from seeds packed in charcoal.		
7	Ditto	ditto	in layers of straw.
149	Ditto	ditto	in dry earth.
166			

6. Of the three parcels of cork-oak acorns, from the Museum, India Office, London, January, 1875, not a single acorn germinated, and I would therefore suggest that another consignment be asked for, and a request made that the acorns be packed in boxes with kiln-dried loam like the sweet chestnuts, and forwarded as early as practicable.

7. The three pounds of sweet chestnuts from the Botanical Gardens, Saháranpur, April, 1875, produced *one* plant only ; and the case of sweet chestnuts from China, received February, 1876, from Dr. King, Superintendent, Botanical Gardens, Howrah, is also a failure, not a single seed has or is likely to germinate.

8. The seeds of white magnolia, received December, 1875, from Mr. Gamble, Assistant Conservator of Forests, Darjeeling, failed.

9. The acacias, deodar, and eucalypti (with the exception of marginata), sown this spring, promise good crops of seedlings.

10. During the rainy season, 6,788 gums, mostly the blue variety, were planted out in the gum plantation near the nursery, and in the cold weather new plantations of horse chestnut and walnuts were formed at Jakhdeo and Garkhet. At the former place 24,700 walnuts and 6,000 horse chestnuts were put down, and at the latter 3,860 walnuts and 4,000 horse chestnuts. The season was not favourable to planting operations. Towards the end of the work came a spell of hot, dry, windy weather, drying up the tops of about 400 plants in rather light soil on the ridges, but the weather afterwards proving favourable, these were replaced by strong plants, and now, with few exceptions, all are thriving.

11. The following forest trees were distributed gratis during the year, *viz.* :—

Gums	276
Acacias	60
Deodar	404
Walnut	87
Horse chestnut	201
Willow	418
Cypress	42
	1,576

12. Of grafted fruit trees the following numbers and kinds were also distributed gratis :—

	Pear.	Plum.	Cherry.	Apricot.	Total.
To villagers	89	18	32	55	194
For Staging Bungalows	12	15	12	12	51
To the American Mission, to plant at Dispensaries,	10	14	16	24	64
Given in exchange for new varieties and seeds,	22	...	9	31	62
	133	47	69	122	371

13. The fruit trees sold are as follows :—

Apple.	Pear.	Plum.	Apricot.	Cherry.	Total.	Price.	Rs. a. p.
						Rs. a.	
20	24	10	...	25	79	1 8	118 8 0
...	...	...	16	...	16	1 0	16 0 0
20	24	10	16	25	95	...	134 8 0

Of Rs. 134-8-0, Rs. 44-8-0 only were realised and entered in the nursery accounts to end of March. Payment of the balance, Rs. 90, is promised, and will, when realized, be entered in the current year's accounts.

14. The stock of plants in the nursery comprises –

1st. Forest trees.

Walnut	32,510
Horse chestnut	3,329.
Gums of sorts	49,271
Acacias ,, ...	16,942
Deodar	28,804
Oak of sorts	1,35,862
Ash	7,547
Maple	1,880
Willow	15,024
Alder	2,230
Chil	3,220
Cypress	232
Total ...	296,851

2nd. Fruit Trees.

Apple, grafted	101	Pear grafted	3,316
,, stocks	1,109	,, stocks	1,852
Apricot, grafted ..	377	Plum, grafted	313
,, stocks ...	3,332	,, stocks	640
Cherry, grafted ...	2,210	Sweet chestnuts ...	1,250
,, stocks	3,097	Loguat	105
Currant	51	Mulberry	33
			17,786

22. **Garhwal Bhabar Division.**—There were no extensively destructive fires in this division within the year. The only one at the beginning of it was got under before it had gathered head, but towards the close of it a square mile block of khair had its less flourishing half consumed, consequent on a native shikarrie having fired the grass, and Mr. Amery writes :—" In March, the fire lines having been cleared of trees, the attempt to burn the dry leaves and small stuff resulted in several fires breaking out and the burning of a total of about 300 acres." But since the 31st

of March the fire conservancy has signally failed, 5,574 acres have been completely burnt, which, with the 300 already mentioned, gives a total of 5,874, or more than one-half of the whole protected area. This must be admitted as a most unsatisfactory result.

Mr. Amery in his report writes :—" The Rámganga was cleared for floating over a length of 35 miles, *viz.*, from the mouth of the Mandál to the timber depôt of Prempúri; rocks were blasted where necessary and possible, and where submerged rocks opposed obstacles to navigation the river was conducted into fresh channels: similarly where the rapids were at right angles to the general course of the river (a common feature) and the water broke with violence against the rocky cliffs, the water was also conducted into fresh channels. The cost of the operation amounted to Rs. 4,000." The work is recorded, but no opinion, either on its cost or utility, can be expressed until it has been inspected or tried.

Mr. Amery continues, " the bulk of the timber felled this year (nineteen-twentieths in fact) had only to be transported over half this course, and from numerous petty difficulties almost inseparable from the initiation of a first experiment, it will hardly be possible to send the whole stock of the year by this channel. The principal difficulty is the want of sufficient floats, an error which I was led into by being furnished with imperfect returns of timber converted during my enforced absence from the scene of felling operations during the season of conversion. But sufficient timber will be sent down to cover all costs by the saving effected by water transport, and the data secured by the experiment give every hope that a net saving of say Rs. 16,000 per annum may be effected on the transport of the Mandál timber after paying all costs of clearance." This second extract advances a supposition which has yet to be tested, and in fairness to the Divisional Officer who has relieved Mr. Amery and who will have the transporting of the timber it cannot be accepted as yet proved, but also in justice to Mr. Amery it must be shown as work done by him during the year.

No heavy planting operations were here undertaken in 1875-76; an attempt was made to begin the re-stocking of the Patli Dún, and 44 acres were prepared for seed, of this area five acres were prepared by stripping the sod in lines two feet wide and six feet apart and digging up the next layer of soil; three acres were prepared in similar lines, but the sod dug over without removal; and 36 acres were prepared by digging the sod in spots two feet square at intervals of six feet and there the work seems to have ended.

Of roads either old or new no mention whatever is made in the Divisional Officer's Annual Report.

23. **Dehra Dun Division.**—It is believed that the survey of this division by the Forest Survey Branch has been completed, though the least important sheets, those of the forests outside the Sewáliks, are the only ones that have yet been issued.

During April, 1875, four destructive fires broke out in the 7,685 acres of strictly conserved forests at Bulawala. By these, 3,200 acres of the protected blocks were burnt. As those fires were reported on by Mr. Down and subsequently by Mr. Whittall besides having been finally commented upon by Mr. Greig in his last Annual Report, nothing further need be added in regard to them. No new forest area was brought under strict conservancy this year, but every possible precaution was taken to defend the original 7,685 acres by clearing and burning the existing fire lines, notwithstanding which a conflagration broke out on the 22nd of February, 1876, and swept through 1,280 acres, of which, however, 640 had been burnt the previous year in the 3,200 then destroyed. All the forest subordinates and patrols attribute this last burning to the Goorkhas, parties of whom were met on that very date searching for game, which would not at that season of the year be easily procurable by men on foot unless they destroyed the cover, and it is remarkable that the first fire of the

season in Government forests was coincident with the return of the regiment from Delhi. But this is about to be made the subject of a separate Report. No fire has been reported since the close of the year.

There were less timber operations in this than in any previous year; indeed, with the exception of the forest fire lines to demarcate Major General Showers' 2,000 acres grant and two other short lines at Thano, no green timber of any description was felled, and only dead trees were removed under the permit system; so that depôt stock, of which there was enough on hand to meet all canal and other indents, has been much reduced, and as natives do not care to take any but fresh materials, it is not intended to refill either of the depôts or to keep up large supplies.

In consequence of Sub-Assistant Conservator Sheikh Muhi-ud-din's sudden indisposition and the loss of his supervision, no creeper cutting was undertaken in 1875-76; charcoal work was not much increased, only 643 maunds having been prepared, but instead of making its own, the Department paid Rs. 25 the one hundred maunds to contractors and sold at the pit for Rs. 55.

In plantations nothing new was started. The sál nursery at Búlawala is still unburnt, but cannot be expected to come rapidly forward until the young trees have overtopped the heavy grass which now retards them.

Colonel Campbell reports from Landour:—"The deodars (about 2,000), which "were planted last year and the year previous are strong and healthy, and so are the "oaks and chestnuts. There were about 30,000 deodar seeds, 3,000 oaks, and 1,000 "chestnuts planted this year. Of the deodar seeds about 2,000 have germinated "and appear to be doing well. The oaks and chestnuts have not yet germinated, but "from their appearance when examined they will probably be soon above ground. "The whole labour has been voluntary, and the result, on the whole, has been success; "and it is hoped when the grant is received that a large amount of trees will be "planted in the cantonment, of which a report will be furnished."

24. **Jaunsar Division.**—1,000 acres of the Kunigád chír forest was added this year to the strictly fire conserved area in Jaunsár Báwar. In independent Garhwál the same forests were protected as heretofore. Only one fire occurred within the protected area and the financial year. This was at Katiyán, but the fire was put out before any timber was damaged and only some three acres of grass were burnt. The cause of this fire could not be traced, though there is but little doubt it originated from the nearest village. Since the close of the year, Mr. Rind reports that Kunigád and Chótrágád reserves were entirely burnt on the 14th June, 1876, and that out of 10,000 chír sleepers stacked near the river some 3,000 odd were consumed, having been ignited by cinders rolling down the hill side. When the jemadar (name not given) found the fire working down towards the stacks, he fired the grass below and let it run up so as to clear the space round about them, but the rolling cinders baffled him and he could not save the entire 10,000. This fire began a mile outside of forest lands and came raging on. Summarized, the protected area was (estimated).

1st class forest	...	...	...	...		acres	16,478
2nd „ „	...	...	...	...		„	42,278

and in addition the leased forests of Lambatach, Datmir and Deota. The fire conservancy of the year was done for the very moderate sum of Rs. 397.

The area of plantations given in last year's report was 613 acres and 29 poles and the cost Rs. 8,878-14-0. During this year 386 acres and two roods were added at a cost of Rs. 2,737-8-10. In describing them an order will be adhered to which will thus have been preserved through three consecutive annual reports.

Bodya.—About 36,660 deodar seedlings were bedded out at 1′ × 2″ apart and sheltered from sun. 1,721 transplants two years old were planted out 3′ × 3′ apart;

they were in a bad state and hence planted close to prevent vacancies. In about 50 acres Moru acorns were dibbled in 8′ × 8″ apart, but only one quarter of them germinated. Nearly 145 acres have been selected and small holes 18″ × 18″ × 1″ dug and cleaned 8′ × 16′ apart and sown with deodar seed. Although the germination has been good, it is too early to pronounce this a success. Oak (*quercus dilatata)* will be dibbled between the patches of deodar.

Kanasur.—Here, in about ·20 acres, Moru acorns were dibbled in 8′ × 8′ and 16′ × 8′ apart and the seedlings are thriving. Alternately with these some 600 deodars were planted out. This cleared the nursery and closed the work.

Kondin.—About 30,000 seedlings were bedded in the nursery. No planting was done, but the lines and the nursery were kept clean and sheltered from the sun by tatties.

Katyán.—At this place 10 acres were planted out with two years old nursery plants 8′ × 8′ apart, and 6,000 seedlings were bedded in the nursery.

Koti.—All the deodar plants remaining in the nursery were bedded out, and this work closed.

Mundhol.—No work done.

Deothat.—About 110 acres have been planted with a mixture of horse chestnuts and two descriptions Oof ak (*quercus dilatata* and *quercus semicarpifolia*). This nursery has been enlarged, and there are now about 24,000 spruce, fir, and kail (*pinus excelsa*) seedlings bedded out. Nearly all plants and seedlings are doing well.

Painawa—Has been abandoned.

Mátkangrá.—Horse chestnuts have been sown over a plot of about 30 acres in patches 8′ × 8′ apart and have germinated freely. This nursery contains 50,000 oak seedlings to be planted out next year.

Koruwá.—Some 10 acres have had acorns (*quercus incana* and *quercus annulata*) dibbled in at 8′ × 8′ apart. Germination has been sporadic, probably owing to the very dry nature of the ground.

Thoná.—At this place about 102,950 Rai seedlings were bedded out at 12″ × 12″ apart. It is too soon yet to speak of results, but many of these perished owing to the grass shades having been removed in December when snow was expected, instead of which there came frost and drought.

In the future, work on plantations is to be confined to Deoban and Bodya to insure more effective supervision. Portions of two blocks (Mohna and Matkangra) in the Deoban working circle, as well as a large tract of chir forest at Kunigád on the Tons, have been closed, and protection from grazing was successfully carried out in all first-class closed forests. The Inspector-General's suggestions for working the Deoban forests have been adopted and a plan has been made out in accordance with them. A survey of the forests of this Division on a 2″ scale has also been started by the Forest Survey Branch and the Great Trigonometrical Survey Department, while a special survey of the Deoban working circle on a 4″ scale has been undertaken by the former.

No creeper cutting was undertaken during 1875-76.

All old roads and bridges were kept in repair, and when being repaired, the former were still further improved in width. Rs. 3,336-6-0 were expended on them. The

following new paths were also opened of the lengths and at the cost here given :—

Name of road.	Length.	Breadth.	Cost.		
	Feet.	Feet.	Rs.	a.	p.
Kunigád and Raturigád	35.0 0	4	499	12	0
Kálsi and Kuwanu	132,000	4	500	0	0
Kuwanu and Tuni	105,600	4	500	0	0
Maindrot and Karauli road	20,400	6	807	9	0
Ditto ditto path	34,525	2	349	15	0
Deothat	6,514	4	195	14	0
Thoná block	5,280	4	200	0	0
Kanasur	3,536	4	183	12	0
Katiyan	6,650	3	196	1	2
Onol	12,800	3	197	8	0
Bageru-lani	1,980	3	136	0	0
Jaku	7,000	3	153	8	0
Benal-Pani	5,300	3	141	0	0
Bina-lani	8,700	3	196	8	0
Bamnai and Sarni	798	3	26	4	0
Kuluri-lani	1,122	3	75	12	6
Churi	250	3	114	8	2
Konain village path	330	3	125	13	9
Lime kiln path	932	3	4	0	0
Bheramari	1,264	4	49	1	7
Belikas	726	3	11	8	0
Gutukigad	3,978	3	81	0	0
Panglu-ki-sak	5,588	3	105	14	0
Kophti and Amari	4,968	4	164	4	7
Lining out tramway in Deoban	...	...	103	8	0
			5,179	2	7

Existing buildings were repaired or kept in order at a cost of Rs. 1,218-15-6 and the following new ones were added to the division at the rates given :—

	Rs.	a.	p.		Rs.	a.	p.
Kálsi forest chauki ...	249	14	11	Katiyán out-houses ...	200	0	0
Chaukidar's hut, Chakráta,	55	1	0	„ patrol's house...	100	0	0
Karhir out-houses ...	199	6	0	Patrol's hut at Mirach ...	101	2	0
Patrol's hut, Deoban ...	101	5	0	Muharrir's house at Konain	73	6	0
Out-offices at Maindrot ...	200	0	0				
				Total ... Rs.	1,280	2	11

This section, in so far as it regards this division, may be concluded with the following extract from a letter sent by Mr. Greig after he had started for England :—
" During the latter fortnight of April, I made a trip to Jaunsár to see that things " were in proper training for the new deodar sleeper works in the forest of Deota. " A capital temporary wooden bridge had been erected over the Tons and the site for " the new wire rope suspension bridge was nearly finished ; food supplies for the " workmen were collected at the lower godown (Tadyar) and were being taken up to " the forests on sheep and goats, and the main road was within a few days of being " opened for laden mules ; the slide line had been carefully marked out, levelled, and " mapped ; gangs were then at work on the roadway and the timbers had all been " prepared and stacked along the line ; work in the forest was getting into full swing, " a good many sawyers had arrived and more were dropping in daily ; excellent " arrangements had been made for a continued supply of grain, &c., and in fact all " the works were well advanced and going on smoothly. Mr. Rind, who is officiating " for Mr. Bagshawe, in charge of the division, was well up in everything, and I left " with the impression that there was no fear whatever of anything going wrong during " Mr. Bagshawe's six months' absence."

2. **Bhagirathi Division.**—No destructive fires occurred during the year under review. No topographical or valuation survey has yet been undertaken in this

division, nor would it be prudent to commence plantations or other improvements until a clear understanding has been arrived at with the Rájah about the renewal of the lease which has now only eight years to run.

The Bhágirathi valley road was again repaired by the Rájah's subjects, but only in the same slovenly manner as before remarked upon. It is evident that the Rájah prefers patching it up by the enforced labour of villagers to placing annually (a negotiation undertaken by the Commissioner of Kumaun) the sum of Rs. 1,200 in the forest officer's hands and leaving him to do the work. It will not take many years to render the pity of this apparent, and as Government spent three lakhs of rupees upon this road the negotiation for the Rs. 1,200 per annum ought not to be lightly abandoned.

In the absence of an European officer all the wire rope suspension bridges were inspected in November by the jemadar, Amba Datt, a man who thoroughly understands their principle, having assisted at the construction of many of them. He reported them as being safe and sound and as not requiring repainting just then. It has also been owing to the absence from the valley of the European officer during the last rains that the broken Ganges bridge at Hirseel has not yet been restored, and that such portions of the road as were not repaired by the Rájah's subjects have still to be put in order.

26. **Gorakhpur Division.**—Block lines were cut during 1875-76 in West Lehra, Dudhai, and Tilkonia, but the Divisional Annual Report does not mention whether in the forests named such work was finished or other lines still remain to be cut. All existing lines in Rámgarh and Nagwa, and most of those in Sonari, were cleaned up with a view to fire conservancy, but in spite of these and other precautions some destructive fires took place, and of the 73,408 acres of protected area about 33,900 acres were burnt.

Of plantation work, Mr. Grant reports that he completely dressed up the nursery and planted out numerous seedlings, *viz.*, sál, 27,874; teak, 2,118; tún, 2,000, and shisham, 72,005. Of these, all the teak and tún and 67,005 of the shisham are still living, but only 2,000 of the sál. Such of the blue gum (*eucalyptus globulus*) and chír (*pinus longifolia*) seedlings as have survived the attacks of white ants are looking healthy. Mr. Grant advocates the cultivation of the bamboo and expresses very great confidence in its adding largely to the revenue of his division.

Charcoal operations have not proved successful. Mr. Grant writes :—" I had but " little doubt that this article must prove a failure in this division yet was most " anxious to make the experiment turn out otherwise if in my power to do so. This, " however, I found quite impossible, there being no local sale for charcoal, and, as it " turned out, but a poor one at Patna and Dinapore. Mr. Amery was far too sanguine " on both these points as well as regards the price to be realized. He also greatly " under-estimated the expenses to be incurred on the whole transaction." Summarized, the result is that the quantity turned out was 6,746 maunds, of which 3,439 maunds were sent to Patna and sold at a loss of Rs. 845-12-0, while a still heavier loss must be anticipated on the remaining 3,307 maunds now rapidly deteriorating at various depôts.

Last year's unfinished creeper cutting in the forests of Bhari Baisi and Bhillampur was completed; and two huts or forest rest-houses were erected at Rámgarh and Nagwa.

SECTION 5.—Yield and working of the Forests.

27. **Naini Tal Sub-Division**—Yielded—

Chír (*pinus longifolia*) trees for building	... ...	886
Oaks and other trees (green) for lime burning	... ...	505
Ditto ditto charcoal	... ...	1,086
Ditto for Commissariat fuel and for others	...	616
Total	...	3,093 trees.

28. **Kumaun Bhabar Division**—Yielded—

Trees felled, sál ... } not including fire lines	...	1,742
Ditto other kind ... } not including fire lines	...	172
Brought to depôt, of sál	...	85,575 c. feet
Ditto ditto other kinds	...	14,626 „
Dry wood removed by the purchasers (1st class)	...	124,771 „
Ditto ditto (2nd class)	...	38,726 „

In addition to which 200 sál trees were, as usual, cut and exported free of duty for the Nawab of Rámpur.

29. **Ranikhet Sub-Division**—Yielded—

Species of tree.	*Removed by purchasers.*		Free to villagers.	Totals.
	Government.	The Public.		
Chír (large) over 5 feet girth	1,056	499	574	2,129
„ (Bansa) from 1½ to 2½ feet girth... ...	104	246	2,175	2,523
„ (Doondar) under 1½	509	527	3,134	4,170
Oak (Banj)	...	...	867	867
Rhododendron	...	...	97	97
Sál	...	...	19	19
Alder (Utis)	...	...	1	1
Total ...	1,667	1,272	6,867	9,806

Besides the above, fuel was supplied (mainly to the Commissariat) to the extent of 15,605,900lbs or say 190,000 Government maunds.

30. **Garhwal Bhabar Division**—Yielded—

Trees felled, sál	...	5,299
„ sein	...	1,482
„ bakli	...	200
„ jamun	...	136
„ bahera	...	166
„ haldu	...	88
„ other forest trees	...	14,568
Total	...	21,939 Trees.

31. **Dehra Dun Division**—Yielded no green timber whatever. There were no fellings of any description for the depôts or for the market, and what fell on Colonel Showers' boundary lines was sold in lump to the highest bidder.

32. **Jaunsar Division.**—Yielded—

Trees felled, deodar	...	1,049
„ oaks, chír and fir	...	2,212

The timber works in hand during the year were—

(*a.*) Chakráta timber supply.
(*b.*) „ fuel „
(*c.*) Tons timber works.
(*d.*) Dún „ „

(*a.*) 14,258 pieces of wood were supplied to the Military works, value Rs. 30,167-2-11.

13,284 pieces of wood were sold to private persons, value Rs. 2,615-1-2.
29,184 pieces were stored in depôt.

(*b.*) Of fuel, there was cut, carried, and delivered, in Cantonments to Commissariat or others 180,000 cubic feet.

Carried and delivered to Public Works Department, near Cantonments for lime burning 24,572 cubic feet.

(*c.*) These consisted in preparing and launching 24,170 metre gauge deodar sleepers from Lambatach, and in sawing out some deodar scantlings on the Rupin for down country markets.

(*d.*) These consisted in despatching 76,335 sleepers to Agra, and 3,666 to Muttra, and in selling off 4,084 of the chír scantlings sent down the previous year, supplemented by miscellaneous sales of other and minor forest produce.

The revenue at Kálsi still tends upwards in a satisfactory manner.

33. **Bhagirathi Division**—Yielded, besides the trees once already alluded to in paragraph 9 of this report, 1,400 dead deodar trees were felled by Mr. Wilson in his capacity of Government contractor, and 62 green deodar trees were felled and removed by Mr. Scott of Mussooree, so that there were taken from these forests.

By Government contractor	1,400	*Cedrus Deodara* (dry).
„ Mr. Scott	62	ditto (green).
„ Villagers (free)	55	*Cedrela Toona.*
	64	ditto, *Var. Serrata.*
	2	*Credus Deodara* (green).
	257	ditto (dry).
	101	*Pinus Longifolia.*
	48	„ *Pindrow.*
Total,	1,989	trees.

Also, of the 1,572 deodar logs left in the river from the previous year, 49 were sawed up by the Department, and yielded 497 sleepers 6′ × 8″ × 4″ which were delivered at Agra. Then Mr. Wilson took over 950 logs for his contract, which, with the 1,400 trees sawed up in the forests, converted into 42,000 sleepers 6′ × 8″ × 4,″ and of these, 30,245 were delivered before the 31st of March, 1876, and credit taken for them. Of the remaining 11,755 sleepers, 7,000 have been collected by Mr. Wilson to be brought out during these present floods, and 4,755 have yet to be accounted for.

34. **Gorakhpur Division**—Yielded—

Trees felled,	sál	15,252	of all sizes.
„	sein,	1,437	ditto.
„	mohwa,	574	ditto.
Giving a total of		17,263	of all sizes.

With the exception of 4,165 sál trees, all of the above were felled on fire lines, mention of which is made in paragraph 26 of this report.

II.—Unreserved or District Forests.

35. **Bijnor Forests.**—These are, as stated last year,—

I.—Chandi Katrukh Forest } Reserved.
II.—Rohur sál „ }

The only other forests under Government control are the three small plots of unreserved Katrukh forests included within the boundaries of the waste land grants of Amsote, Kamálpur, and Mohanwali. They have annually been leased by the Collector.

The tract No. I. is situated in the extreme north of the district, and forms the major part of the triangle based on the Rawasan river to the south, flanked on the west by the Ganges, and on the east by the sub-montane road. The rest of the triangle consists of nine separately demarcated and partly cultivated villages. The Peli Rao flows through this tract nearly parallel to the base. The upper part is leased to the Roorkee Workshops at Rs. 5,000 per annum for the purpose of supplying them charcoal. The area of this portion is more or less 30,000 acres. The remaining 9,379 acres were leased during the year under report to Mr. Tresham for Rs. 3,200.

The tract No. II. is entirely sál forest. The minor produce of this was leased, and the cutting, and carriage, and storage of the ballies was entrusted to two thekúdars, Hulas Singh and Muzaffar Khan; the former engaged to get the ballies out of the forests nearer Rehar at Rs. 10 per hundred, while the latter undertook the task of getting them from the furthest side from Rehar on condition of receiving 50 per cent. of their value.

The forests of Kamálpur and Mohanwali were also leased as usual, but the Amsote forest has been this year closed by order of Government.

The forest rules and fire conservancy have been well upheld. There were only three cases of breach of the former, in all of which the delinquents were convicted and duly punished, while by fires no material damage was done.

There are very few large sál trees in these forests and their yield for 1875-76 has been 3,743 ballies, and 1,066 pieces of drift wood.

The tahsíldar of Nagína is again mentioned most favourably, and the entire foregoing matter in connection with the Bijnor forests has been given almost verbatim from Mr. Boulderson's report.

36. **Bareilly Forests**—Comprise 87,680 acres, and having been demarcated by masonry pillars have been classed as reserved forests in accordance with Government of India order No. 236, dated 14th March, 1876.

The income of 1875-76 was Rs. 8,298-1-9, of which firewood and charcoal brought in Rs. 4,018-11-0, grazing dues Rs. 2,768-5-9, seenkh, &c., Rs. 154-1-0, and the leasing of the Puranpur forests Rs. 1,357. The expenditure was Rs. 4,112-15-9, thus—protective establishment Rs. 504, office establishment Rs. 624, stationery Rs. 22-7-0, forest roads and bridges Rs. 2,962-8-9.

There have been no prosecutions during the year under review.

37. **Jhansi Forests**.—Though all demarcated, as yet come under the head of unreserved, but the notification which by publication in the Gazette will convert them into reserved forests is now being prepared. They comprise an area of 22,844 acres. The new forest rules are also about to be enforced in them.

No fires are reported as having occurred during 1875-76, but there were seven cases of prosecution for breach of Forest Rules. In these nine persons were implicated and only one man was released for want of sufficient evidence, all the rest were convicted and punished.

826 acres of the teak and bamboo forests were selected for fire conservancy and the work completed at a cost of Rs. 125: no portion of it was burnt. Sowing three acres in Dhakwan and Bungowan forests along the river Betwa with teak seed cost Rs. 65. The seed was first saturated in a preparation of sand and water and then sown in beds eight feet apart. The result, however, was disappointing. Most of the seed germinated and was doing well when Mr. Barry visited the forests in March; on a subsequent visit in May, he found that almost all the young seedlings had been killed by the excessive heat. There were also some sowings of babúl and sheesham in Magarpur, Bhasnoo and Magarwala which are reported as successful.

38. **Lalitpur Forest.**—Comprises 158,080 acres, but as yet only 2,428 have been denominated reserved forests. They will all, however, be classed as such in the same notification as is to be published about the Jhánsi forests.

The establishment of depôts for these forests has proved a complete success as regards meeting the demands of the population. The depôt at Lalitpur is most popular, and its income is steadily increasing; a sum of Rs. 279-14-4 was expended for cutting and conveying bamboos and bullies to this depôt, and the income for these in 1875-76 was Rs. 703-1-8. The sale of bullies and bamboos from the forests direct realized Rs. 981-8-9, against an expenditure of Rs. 119-15-6.

The great difficulty at present is the want of carriage to bring bamboos and bullies to the depôt, the country cart being of the poorest description and very hard to procure. The savings of last year, Rs. 100, having lapsed, could not be utilized to build carts, as was proposed, but if Rs. 400 were devoted to this purpose and the purchase of bullocks, Major Liston thinks it would quickly and with compound interest be regained by the decreased expenditure for carriage.

I.—FINANCIAL RESULTS.

SECOND PART GENERAL.

39. **Naini Tal Sub-division**—The accounts of this sub-division show—

		Rs. a. p.	Rs. a. p.
	Receipts	5,124 1 6	
	Expenditure	2,899 12 2	
I. 2 (*a*).	Chír trees ...	... ...	3,379 7 0
I. 2 (*b*).	Oaks and other trees	912 14 0	
	Fuel tickets ...	90 12 0	
	Charcoal (from stumps)	17 0 0	
			1,020 10 0
I. 3	Confiscated wood ...	... ...	1 0 0
II. 1	Grazing dues ...	... ...	45 12 0
II. 2	Tar from stumps ...	... ...	88 0 0
IV. 1	Fines ...	... ...	68 10 0
IV. 3	Royalty on potato cultivation	... ...	520 10 6
			5,124 1 6

Compared with last year there is an increase in receipts of Rs. 3,395, and this should have been Rs. 710-6-8 more, but this latter sum, though royalty on fuel consumed in February, was not paid in till after the 31st of March. There is, of course, an increase in expenditure also, amounting to Rs. 1,841, but certain items, which helped to swell it, such as Rs. 125 for copies of village maps, and Rs. 420 for saws, are non-recurring ones, so that while expenditure may not for some time go much higher, there can scarcely be a doubt as to revenue rising rapidly.

The greatest credit is due to Mr. Braidwood for the manner in which he is developing this sub-division into a division, and all the more so because sometimes his duties are far from pleasant, and a forest officer who comes in contact with the mixed community of a large sanitarium requires an extra stock of tact and patience.

40. **Kumaun Division.**—Including the Naini Tal and Ránikhet sub-divisions.

The finally adopted figures of the regular estimate were—

			Rs.
	Receipts		2,85,959
A.	Conservancy and working charges,	82,000	
B.	Establishment ...	27,484	1,09,484
			Surplus, 1,76,475

The actuals of the year are—	Rs.	Rs.
Receipts		2,97,334
A. Conservancy and working charges,	80,599	
B. Establishment ... „	26,833	1,07,432
	Surplus,	1,89,902

DETAILS OF REVENUE.

Head I. 1 (*a*). Timber and bamboos brought to depôt by departmental agency.

		Rs.	a.	p.	Rs.	a.	p.
Sál logs	...	44,880	1	5			
„ kulus	...	816	12	3			
„ beams	...	2,770	5	2			
„ sleepers	...	3,757	9	0			
„ kurries	...	46,440	9	8			
„ planks	...	3	1	0			
„ joras	...	791	5	5			
„ gindas	...	297	15	3			
„ bullies	...	207	12	6			
Sain kurries	...	3,460	14	11			
Haldu do.,	...	431	11	9			
„ logs	...	28	12	2			
„ batáhs	...	402	14	10			
Dhauri kurries	...	681	2	6			
„ logs	...	353	8	6			
Tún planks	...	590	11	3			
Jamun kurries	...	445	14	0			
„ logs	...	11	5	6			
Bakli kurries	...	269	13	5			
Jhingan ditto	...	130	10	0			
Matau ditto	...	30	0	0			
Chír ditto	...	28	14	11			
Bahera ditto	...	3	12	0			
					1,06,835	9	5

Head I. 2 (*a*). Wood and bamboos removed from the forests by purchasers :—

	Rs.	a.	p.	Rs.	a.	p,
Trees, bansas, bullies, &c.	9,816	4	9			
Tors, golas, &c. ...	1,10,754	3	7			
Bamboos	11,834	12	7			
				1,32,405	4	11

Head I. 2 (*b*). Firewood and charcoal removed by purchasers :—

		Rs.	a.	p.
	Firewood and charcoal	15,606	6	9
Head I. 3.	Confiscated drift and waif-wood ...	2,458	11	3
„ II. 1.	Grazing dues and sale of grass ...	9,633	1	5

„ II. 2. Other minor produce, *viz.*:—

	Rs.	a.	p.
Limestone and lime ...	10,735	4	9
Skins	5,314	1	0
Baskets	877	3	10
Patia, pali, bara, and drums ...	409	10	3
Bees-wax ...	815	15	10
Honey	429	13	2

	Rs.	a.	p.	Rs.	a.	p.
Kamela (Róttlera tintòria) powder ...	2,541	11	10			
Kaphal (Myrica sipida) bark	160	7	4			
Catechu manufacture	3,766	9	11			
All other kinds ...	2,317	9	9			
				27,368	7	8
Head IV. 1. Fines and forfeitures				1,354	15	9
„ 2. Refunds to the department ...				201	10	5
„ 3. Other sources				1,469	8	9

Included in the foregoing are the receipts of the Naini Tal and Ránikhet sub-divisions. The figures appertaining to the former have been already given in separate form (see para. 39), and those of Ránikhet appear in the succeeding para.

41. **Ranikhet Sub-division**—

	Rs.	a.	p.
Receipts	15,692	8	6
Charges	15,672	13	9
Surplus ...	19	10	9

The surplus is small, but is, at the same time, indicative of a better state of things in the sub-division, which has never been before worked except at a loss.

The detail of revenue is as follows :—

		Rs.	a.	p.
Head I. 2 (*a*).	Sale of trees (Rs. 4,995-12-0) and charpoys (Rs. 11-3-0)	5,006	15	0
„ I. 2 (*b*).	Firewood	9,753	11	0
„ II. 2.	Flagstones	3	12	0
„ IV. 1.	Fines	9	4	0
„ IV. 3.	Squatters in forest	918	14	6
	Total ...	15,692	8	6

42. The financial results of forest administration in the Kumaun Division (including its two sub-divisions) cannot but be considered as eminently satisfactory, for not only have the actual receipts exceeded the regular estimate by Rs. 11,375, but the charges were less by Rs. 2,052 than the amount finally estimated. Added together, these sums represent a clear profit over the regular estimate of Rs. 13,427, whilst, as has been stated in para. 40, the total surplus amounts to Rs. 1,89,902.

The outstandings at the close of the year amounted to Rs. 35,300-5-1, of which amount Rs. 31,584-12-3 appertain to the month of March alone, thus showing that but little was owing for remote periods. Nearly one-half of the former sum was recovered in April, and only a comparatively small sum now remains to be recovered.

The liabilities of this division at the close of the year were Rs. 1,042-11-7, now nearly all paid off.

43. **Garhwal Division.**—The final revised estimate was—

	Rs.	Rs.
Receipts		1,66,000
Charges under A. Conservancy and working ...	67,905	
„ „ B. Establishment	18,882	
		86,787
Surplus ...		79,213

and the actuals are :—

			Rs.
Receipts	„		2,00,946
Charges under A. Conservancy and working	Rs.	64,678	
„ „ B. Establishment ...	„	20,516	
			85,194
Surplus ...	Rs.		1,15,752

DETAIL OF REVENUE.

		Rs. a. p.	Rs. a. p.
Head I. 1 (*a*).	Sál logs	1,092 11 11	
	„ kurries	54,483 12 9	
	„ sleepers	4,147 6 0	
	„ butts	8 0 0	
	„ scantlings	2,228 6 2	
	Kokát ballás	2,771 5 2	
	Bakli beams	5,727 2 7	
	Sain kurries	3,265 5 1	
	Kokát „	21,182 5 11	
	Kokát tors	900 0 0	
			95,806 7 7
Head I. 1 (*b*).	Firewood	...	416 10 0
		Rs. a. p.	
Head I. 2 (*a*).	Bamboos	68,385 5 6	
	Khair wood	1,281 1 0	
	Sál „	21,433 1 4	
	Sándan „	1,041 12 6	
	Kokát „	1,341 9 3	
	Tún „	309 10 0	
	Sisham „	181 13 1	
	Gosham „	413 10 2	
			94,387 14 10
Head I. 2 (*b*).	Firewood	...	632 6 5
„ I. 3.	Confiscated drift and waif-wood ...	...	494 2 9
„ II. 1.	Grazing dues and sale of grass ...	...	4,669 0 11
„ II. 2.	Khara mati	623 3 0	
	Bind	161 15 9	
	Skins	1,389 3 6	
	Kunda	312 13 0	
	Honey	128 2 9	
	Other produce	1,056 11 7	
			3,672 1 7
Head IV. 1.	Fines and forfeitures	...	244 4 2
„ IV. 2.	Refunds	...	55 7 5
„ IV. 3.	Other sources	...	567 14 6

From the figures quoted at the commencement of this paragraph it will be observed that whilst in the regular estimate a surplus of only Rs. 79,213 was anticipated, the actual surplus amounts to Rs. 1,15,752, or Rs. 36,539 more than was expected. This increase chiefly concerns head I. 1 (*a*), under which Rs. 95,806 have been realised against Rs. 60,000 assumed in the regular estimate. In connection with this, Mr. Amery gives the following explanation :—" Much of the increase is due " to the auction sales of old stock, which had been long held back for better prices than

"were obtainable, andof Kokít timbers, which had also been assessed far too high, but "this stock has been replaced, and apart from realizations under this head I. 1. (*a*), "it will be satisfactory to observe that there is a general improvement under all heads, "the more so that these results have been attained in spite of restrictive measures "instituted in the interests of the forests."

The outstandings amounted to Rs. 7,226-4-2 at the close of the year, and the liabilities to Rs. 16,154-10-2. The former sum is composed of petty payments, chiefly made in March, the closing month of the year, but also includes that doubtful item of Rs. 1,787 mentioned in paragraph 44 (last clause) of last year's report. A decree for the full amount and costs has been obtained, but it is questionable whether the money will ever be realized.

The liabilities consist of advances made by timber traders for wood, &c., at present under delivery.

44. **Dehra Dun Division.**—The final figures of the revised estimate were—

	Rs.	Rs.
Receipts		88,000
Expenditure A.	11,184	
Ditto B.	14,419	
		25,603
Surplus		62,397

And the actuals amount to—

Receipts		67,521
Expenditure A.	10,787	
Ditto B.	14,684	
		25,471
Surplus ...		42,050

The surplus expected by the Conservator (see printed budget of the North-Western Provinces for 1876-77, column "Regular Estimate, 1875-76"), amounted to Rs. 43,397, or only Rs. 1,347 more than that realized.

It was on receipt of the orders of the Government of India on the forest budget for 1876-77 that modifications in the Dehra Dún regular estimate, resulting in an anticipated surplus of Rs. 62,397, were made. As the Conservator's estimate was very near the mark, *vide* above comparison, nothing more need be said on this point.

The following details will show how the revenue under each head has been realized :—

		Rs.	a.	p.	Rs.	a.	p.
Head I. 1. (*a*).	Kokát sloepers ...	2,992	0	0			
	Sál kurries	1,110	14	1			
	„ bargas	2,907	11	7			
	„ ghats	756	4	0			
	Tors	662	10	0			
	Sándan ghats... ...	279	10	5			
	Ballas	125	0	0			
	Bullies	18	12	0			
	Tarun	298	12	0			
	Planks	54	0	0			
	Bamboos	462	3	10			
					9,667	13	11

		Rs.	a.	p.	Rs.	a.	p.
Head I. 1 (*b*).	Firewood and charcoal ...			...	224	4	3
Head I. 2 (*a*).	Tors	8,065	2	3			
	Tham thunis (short logs) ...	872	10	6			
	Kornas	256	7	4			
	Bullies	519	6	0			
	Khair churan--- ...	1,951	13	5			
	Sisham	124	4	6			
	Kokát wood	55	8	0			
	Sándan ploughs ...	257	4	0			
	Udh	46	0	0			
	Pharwa	4	0	0			
	Bamboos	9,235	2	0			
	Latti	986	8	6			
	Bansi	220	11	0			
	Ballas	1,750	0	0			
	Kurries	635	0	0			
					24,979	13	6
Head I. 2 (*b*).	Firewood	9,613	2	2			
	Charcoal	1,375	3	0			
					10,988	5	2
Head I. 3.	Confiscated drift and waif-wood ...				411	3	3
		Rs.	a.	p.			
Head II. 1.	Grazing dues ...	8,146	1	9			
	Grass	3,622	15	6			
					11,769	1	3
Head II. 2.	Bhábar grass ...	3,774	9	9			
	Bakli leaves	693	10	9			
	Beend reeds	162	8	6			
	Munj	850	5	1			
	Honey	339	6	0			
	Hides	97	4	0			
	Limestone	723	2	2			
	Lime	122	3	0			
	From other sources ...	461	1	1			
					7,224	2	4
Head IV. 1.	Fines and forfeitures ...			...	1,095	8	2
„ IV. 2.	Refunds			...	1,040	8	2
„ IV. 3.	Other sources... ...			...	120	1	10

The outstandings at close of year amounted to only Rs. 4,161-7-11. There were no liablities.

45. **Jaunsar Division.**—The figures of the regular estimate stood as follows at the close of the year :—

	Rs.	Rs.
Receipts		2,23,649
Expenditure under A. ...	...1,42,000	
„ „ B. ...	... 17,091	
		1,59,091
Surplus ...		64,558

The actuals amounted to—

Receipts		2,22,247
Expenditure under A. ...	1,44,564	
„ „ B. ...	... 22,952	
		1,67,516
Surplus ...		54,731

so that the surplus attained is less, by Rs 9,827, than the estimate. The actual receipts approximate so closely to the estimate that no explanation of the difference seems called for. The charges under both A. and B. exceed the estimate by Rs. 2,564 and Rs. 5,861, respectively. In explanation of the first of these items, Rs. 6,000 (in round figures) were spent in addition to the amount entered in the regular estimate under head A. I. 1 (*a*). (see paragraph 2 of Conservator's No. 215, dated 14th February, 1876, where special allusion is made to this Rs. 6,000), but by savings under other heads the net amount over-spent is, as stated, only Rs. 2,564. As regards the excess under head B., it has been caused entirely by transfers, promotions, &c., among the officers attached to the division during the year.

The revenue under each head has been realized as stated below :—

		Rs.	a.	p.	Rs.	a.	p.
Head I. 1 (*a*).	Sale of timber at Chakráta ..	31,600	4	0			
	„ „ chír do. at Delhi ...	7,407	2	11			
	„ „ Deodar sleepers ...	1,50,472	8	0			
					1,89,479	14	11
Head I. 1 (*b*).	Sale of firewood at depôts ...	...		...	29,731	11	8
„ I. 2 (*a*).	Tham thuni (short logs), bullies, kornas, and dry timber				303	12	5
„ I. 2 (*b*).	Firewood and charcoal ...	...		...	925	1	9
„ I. 3.	Confiscated drift and waif-wood	...		...	25	12	6
„ II. 1.	Grazing dues	800	0	0			
	Grass	258	15	3			
					1,058	15	3
Head II. 2.	Limestone	286	2	2			
	Fruits	87	1	10			
	Hides	22	0	0			
	Ritha and kalazira	74	15	9			
	From other sources	11	14	5			
					482	2	2
Head IV. 1.	Fines	...		...	77	1	0
„ IV. 2.	Refunds	...		...	90	8	2
„ IV. 3.	Other sources	...		...	72	4	6

At the close of the year the following sums were due to and by the department in Jaunsar :—

		Rs.	a.	p.
Due to the department	Permanent advance account ...	26,300	0	0
	Outstandings by contractors, &c.,	12,921	5	9
Liabilities due by the department for work in progress ...		19,954	10	2

Of the amount of outstandings due by Contractors only, about Rs. 1,300 may be considered as a "bad debt."

46. **Bhagirathi Division.**—At the close of the year the regular estimate figures were—

	Rs.	Rs.
Receipts		1,01,075
Expenditure under A.	70,140	
Ditto ditto B.	15,531	
		85,671
Surplus		15,404

The actuals compare very favourably indeed with the foregoing, they are—

	Rs.	Rs.
Receipts		1,00,480
Expenditure under A.	69,940	
Ditto ditto B.	14,660	
		84,600
Surplus		15,880

The details appended give particulars of the revenue realized under each head—

		Rs.	a.	p.			
Head I. 1 (*a*).	41,039 sleepers, 6′ × 8″ × 4½″ @ Rs. 2-0-0 ...	82,078	0	0	supplied to Rájputána State Railway.		
	534 rejected sleepers, 6′ × 8″ × 4″ @ Re. 0-8-0 ...	267	0	0			
	368 rejected sleepers, 8¼′ × 8″ × 5″ @ Re. 0-8-0,	184	0	0			
	1,533 rejected sleepers, 6′ × 8″ × 4½″ @ Re. 0-6-0	574	14	0			
	Royalty on rejected sleepers	217	9	7			
	Boxwood, 217′ 9″ @ Rs. 3 per cubic feet ...	653	4	0			
	950 Deodar logs at Rs. 6 each	5,700	0	0	Rs.	a.	p.
					89,704	11	7
Head I. 1 (*b*).	Refuse deodar or firewood, 49,377 maunds at various rates				8,064	5	6
Head I. 2 (*a*).	Six deodar logs ...	98	1	0			
	100 deodar trees @ Rs. 10	1,000	0	0			
	Miscellaneous deodar wood	197	7	0			
	Seven rejected deodar logs	28	0	0			
	1,667 rejected sleepers ...	250	0	0			
					1,573	8	0
Head I. 2 (*b*).	4,709 maunds of firewood ...				473	3	9
„ I. 3.	Confiscated drift and waif-wood ...				356	5	1
„ IV. 1.	Fines				112	8	0
„ IV. 2.	Refunds				162	1	7
„ IV. 3.	Other sources...				33	4	0

There were no liabilities, and only Rs. 5,000 of an outstanding due at the close of the year.

47. **Gorakhpur Division.**—The regular estimate figures finally adopted were :—

	Rs.	Rs.
Receipts		41,700
Expenditure under A.	13,155	
Ditto ditto B.	14,086	
		27,241
Surplus		14,459

The actuals, however, show that this surplus was exceeded by Rs. 8,000 and odd rupees :—

	Rs.	Rs.
Receipts		49,378
Expenditure under A.	13,154	
Ditto ditto B.	13,681	
		26,835
Actual surplus		22,543

A decrease of Rs. 4,000 under head I. 1 (*a*), and of Rs. 800 under I. 2 (*b*), total Rs. 4,800, was more than met by an increase of Rs. 500 under I. 1 (*b*) of Rs. 8,500, under I. 2 (*a*) of Rs. 2,000, under II. 1, and of Rs. 1,150, under IV. 1, 2, and 3, equal total Rs. 12,150. Other minor differences have not been dwelt upon. The result of Mr. Grant's first financial programme is cheering.

The usual details of the revenue are appended :—

		Rs.	a.	p.	Rs.	a.	p.
Head I. 1 (*a*).	Timber, sál logs chiefly ...	9,242	2	9			
	Ditto ballas	8,735	2	0			
	Ditto kurries	305	10	6			
					18,289	15	3
Head I. 1 (*b*).	Fire-wood and charcoal	...		...	4,556	14	6
Head I. 2 (*a*).	Building wood	737	4	6			
	Mhowa wood (from line cutting)...	1,480	0	0			
	Ballas	6,079	4	10			
	Standing trees	11,362	5	4			
	Wood for carts	350	0	0			
					20,008	14	8
Head I. 2 (*b*).	Fire-wood and charcoal	...		...	2,246	14	0
„ II. 1.	Grazing dues, Rs. 1,496-7-11, long grass, Rs. 1,203-15-6=	...		...	2,700	7	5
„ II. 2.	Mhowa fruit	50	0	0			
	Other fruits	101	14	0			
	Nar (canes)	6	6	0			
	Palwat pattori	60	3	0			
	Leaves	4	0	0			
					222	7	0
Head IV. 1.	Fines and forfeitures ...	...		...	47	0	0
„ IV. 2.	Refunds	...		...	785	10	0
„ IV. 3.	From other sources ...	...		...	520	2	6

At the close of the year there was owing to the Division, by contractors and others, a sum of Rs. 3,658-7-8, all of which is sure to be realized. The liabilities amounted to Rs. 1,884-0-9, being money deposited beforehand for timber now in course of delivery.

48. **Jhansi Division.**—The following were the final figures of the regular estimate :—

	Rs.	Rs.
Receipts	...	6,310
Expenditure under A.	2,198	
„ „ B.	2,252	
		4,450
Surplus ...	...	1,860

Compared with which the actuals figure so very favourably that no explanation of the slight difference seems to be called for. Those actuals are:—

	Jhánsi. Rs.		*Lalitpur.* Rs.		*Total.* Rs.
Receipts	2,727	+	3,890	=	6,617
Charges under A. ...	985	+	1,168	=	2,153
„ „ B. ...	1,108	+	1,105	=	2,213
Total Charges ...	2,093	+	2,273	=	4,366
Surplus ...	634	+	1,617	=	2,251

Compared with those of 1874-75, the actuals of the past year figure as below:—

RECEIPTS.

Jhánsi, a decrease of Rs. 387; Lalitpur, an increase of Rs. 377, which almost atones for the falling off in Jhánsi.

EXPENDITURE.

Jhánsi, an increase of Rs. 20; Lalitpur, also an increase, amounting to Rs. 227; total increase, Rs. 247, which, *plus* the decrease of Rs. 10 under receipts, shows that the surplus of the past year fell short by Rs. 257 of that of the previous year, 1874-75.

The following is a detail of the revenue:—

		Jhánsi.		*Lalitpur.*		*Total.*	
		Rs.		Rs.		Rs.	Rs.
I. 1 (*a.*)	Ballies	69	+	70	=	139	
	Bamboos	34	+	623	=	657	
	Kurries	..	+	10	=	10	
							806
I. 1 (*b*).	Fire-wood and charcoal	571	+	...	=	571	
							571
I. 2 (*a*).	Ballies	...	+	123	=	123	
	Bamboos	...	+	695	=	695	
	Kurries	...	+	151	=	151	
							969
I. 2 (*b*).	Charcoal	...	+	12	=	12	
							12
II. 1.	Grass	1,409	+	1,166	=	2,575	
							2,575
II. 2.	Mhowa	...	+	189	=	189	
	Lac	...	+	111	=	111	
	Ghonte leaves ...	17	+	73	=	90	
	Catechu	...	+	190	=	190	
	Kiras	230	+	...	=	230	
	Kurries	190	+	...	=	190	
	Jhánkars	201	+	...	=	201	
	From other sources ...	...	+	5	=	5	
							1,206
IV. 2.—Refunds		...	+	7	=	7	
							7
IV. 3.—From other sources ...		6	+	465	=	471	
							471

There were neither outstandings nor liabilities in Jhánsi at the close of the year, and only Rs. 61-7-3 under the former head due to the Lalitpur forests.

49. **Rohilkhand Division.**—The regular estimate stood as follows at the close of the year:—

	Rs.	Rs.
Receipts	...	25,297
Expenditure under A., ...	6,444	
" " B., ...	1,928	
		8,372
Surplus ...	...	16,925

The actuals stand as follows:—

Receipts	...	25,174
Expenditure under A., ...	5,463	
" " B., ...	1,924	
		7,387
Actual surplus ...	...	17,787

So that the estimated surplus has been exceeded by Rs. 862. Savings under nearly every head of A., "Conservancy and Working," slightly reduced in their aggregate by a falling off of Rs. 123 in the receipts, are sufficient explanation of this favourable excess.

A detail of the revenue follows :—

	Bareilly.	Bijnor.	Total.
	Rs.	Rs.	Rs.
Head I. 1 (*a*). Sál ballies		+ 965 0 0	= 965 0 0
		Two years' rent of Chandi forest.	
I. 2 (*b*). Fire-wood and charcoal,	4,019	+10,000 0 0	=14,019 0 0
I. 3. Confiscated, drift, and waif-wood ...		+ 1,097 0 0	= 1,097 0 0
II. 1. Grazing dues ...	2,768	+ 82 0 0	= 2,850 0 0
II. 2. Other minor produce ...	354	+ ...	
Lease of Najíbabad forests ...		+ 4,138 0 0	= 5,021 0 0
Ditto Rehar „ ...		+ 529 0 0	
IV. 1. Fines, &c.		+ 45 0 0	= 45 0 0
IV. 3. Other sources ...	1,157	+ 20 0 0	= 1,177 0 0

The Bareilly accounts show neither outstandings nor liabilities, while in Bijnor only Rs. 11 were outstanding at the close of the year under review.

50. **General Summary.**—Summarised, the actual results of the year, as regards receipts and expenditure, compared with the regular estimate sanctioned by the Government of India, are as follows :—

	Regular estimate, 1875-76.	*Actuals*, 1875-76.
	Rs.	Rs.
Receipts	9,38,000	9,69,698
Expenditure A. and B. ...	5,40,000	5,37,914
Surplus ...	3,98,000	4,31,784
		3,98,000
Excess surplus	...	33,784

The two following statements—the first showing the revenue realized, and the second the amount expended in each Division, as compared with the regular estimate finally sanctioned by the Government of India, will elucidate the above summary :—

Divisions.	Receipts.		Increase.	Decrease.	Net increase.
	Regular estimate, 1875-76.	Actuals, 1875-76.			
	Rs.	Rs.	Rs.	Rs.	Rs.
Direction Division ...	10	*Nil.*	...	10	
Kumaun ditto ...	2,75,500	2,76,517	1,017	...	
Naini Tal Sub-division	1,709	5,124	3,415	...	
Ránikhet ditto ...	8,750	15,693	6,943	...	
Garhwál Division ...	1,66,000	2,00,947	34,947	...	
Dehra Dún ditto ...	88,000	67,521	...	20,479	
Jaunsár ditto ...	2,23,649	2,22,247	...	1,402	
Bhágirathi ditto ...	1,01,075	1,00,480	...	595	
Gorakhpur ditto ...	41,700	49,378	7,678	...	
Jhánsi ditto ...	6,310	6,617	307	...	
Rohilkhand ditto ...	25,297	25,174	...	123	
Total ...	**9,38,000**	**9,69,698**	**54,307**	**22,609**	**31,698**

Divisions.	Expenditure A. and B.		Increase.	Decrease.	Net decrease.
	Regular estimate, 1875-76.	Actuals, 1875-76.			
	Rs.	Rs.	Rs.	Rs.	Rs.
Direction Division ...	33,301	29,114	...	4,187	
Kumaun ditto ...	87,735	88,860	1,125	...	
Naini Tal Sub-division,	2,084	2,899	815	...	
Ránikhet ditto ...	19,665	15,673	...	3,992	
Garhwál Division ...	86,787	85,194	...	1,593	
Dehra Dún ditto ...	25,603	25,471	...	132	
Jaunsár ditto ...	1,59,091	1,67,516	8,425	...	
Bhágirathi ditto ...	85,671	84,599	...	1,072	
Gorakhpur ditto ...	27,241	26,835	...	406	
Jhánsi ditto ...	4,450	4,366	...	84	
Rohilkhand ditto ...	8,372	7,387	...	985	
Total ...	**5,40,000**	**5,37,914**	**10,365**	**12,451**	**2,086**
Excess surplus over the regular estimate ...					**33,784**

51. This chapter (financial results) would be incomplete without the divisional statements in the (revised) form No. 28, and these are, therefore, appended, the following summary having been compiled from them :—

Particulars.		Amount in Rs.
Receipts of the department during 1875-76		9,69,698
Expenditure ditto ditto		5,37,914
Surplus ...		**4,31,784**
	Rs.	
Value of timber at commencement of the year ...	3,91,829	
Ditto close ditto	3,77,522	
Difference against the year to be deducted		14,307
Balance ...		**4,17,477**
Value of other live and dead stock at close of the year which stock has never before been brought into the annual accounts, and so must be added		96,905
Balance ...		**5,14,382**
Deduct— Amount of revenue realized on account of previous periods,		31,459
Balance ...		**4,82,923**
Add— Outstandings of the year, minus bad debts		59,716
Balance ...		**5,42,639**
Add— Amount disbursed on account of previous periods ...		28,448
Balance ...		**5,71,087**
Deduct— Amount due on transactions of the year but not yet paid ...		39,036
Balance showing Actual Profits of the year ...		**5,32,051**

No. 28.

Annual Account of Forest Revenue for 1875-76.

Division	Receipts.	Amount.	Disbursements.	Amount.
		Rs. a. p.		Rs. a. p.
Dehra Dún.	Amount of revenue realized in 1875-76	...	Amount disbursed in 1875-76...	29,113 13 9
	Deduct— Amount realized on account of previous periods ...	...	Deduct— Amount disbursed on account of transactions of former periods	...
	Balance ...	...	Balance ...	29 113 13 9
	Add— Outstandings on account of the year ... ... Minus for bad debts ...	... ...	Add— Amount due for transactions during the year under review, but not yet disbursed ...	...
	Value of the year's transactions	...	Real cost of year's transactions	29,113 13 9
				Rs. a. p.
	Value of the year's transactions			...
	Cost of the year's transactions. Loss			29,113 13 9
	Balance ...			29,113 13 9
	Add difference between the value of timber stock at the commencement and close of the year			...
	Net result of the year. Loss ...			29,113 13 9
Kumaun Division.		Rs. a. p.		Rs. a. p.
	Amount of revenue realized in 1875-76 ...	2,97,333 12 4	Amount disbursed in 1875-76	1,07,432 5 8
	Deduct— Amount realized on account of previous periods ...	4,363 9 9	Deduct— Amount disbursed on account of transactions of former periods	276 14 5
	Balance ...	2,92,970 2 7	Balance ...	1,07,155 7 3
	Add— Outstandings on account of the year ...	33,555 5 1	Add— Amount due for transactions during the year under review, but not yet disbursed ...	1,042 11 7
	Minus for bad debts ...	...		
	Value of the year's transactions ...	3,26,525 7 8	Real cost of year's transactions, Rs.	1,08,198 2 10
				Rs a. p.
	Value of the year's transactions			3,26,525 7 8
	Cost of the year's transactions			1,08,198 2 10
	Balance ...			2,18,327 4 10
	Add difference between the value of timber stock at the commencement and close of the year—		Rs. a. p.	
	Timber		3,302 3 2	20,657 6 2
	Other stock		17,355 3 0	
	Net results of the year. Profit ...			2,38,984 11 0

Division	Receipts.	Amount.	Disbursements.	Amount.
		Rs. a. a.		Rs. a. p.
Garhwál.	Amount of revenue realized in 1875-76	2,00,946 6 2	Amount disbursed in 1875-76	85,193 10 4
	Deduct— Amount realized on account of previous periods ...	2,575 0 11	Deduct— Amount disbursed on account of transactions of former periods	1,000 0 0
	Balance ...	1,98,371 5 3	Balance ...	84,193 10 4
	Add— Rs. a. p.		Add—	
	Outstandings on account of the year ... 7,226 4 2	...	Amount due for transactions during the year under review, but not yet disbursed	16,154 10 2
	Minus for bad debts ... 1,837 0 10	5,389 3 4		
	Value of the year's transactions	2,03,760 8 7	Real cost of year's transactions	1,00,348 4 6
				Rs. a. p.
	Value of the year's transactions			2,03,760 8 7
	Cost of the year's transactions			1,00,348 4 6
	Balance ...			1,03,412 4 1
	Add difference between the value of timber stock at the commencement and close of the year—		Rs. a. p	
	Timber		71,722 0 11	82,291 6 11
	Other stock		10,569 6 0	
	Net results of the year. Profit ...			1,85,703 11 0
Dehra Dún.		Rs. a. p.		Rs a. p.
	Amount of revenue realized in 1875-76	67,520 13 10	Amount disbursed in 1875-76	25,470 10 7
	Deduct— Amount realized on account of previous periods ...	1,865 12 9	Deduct— Amount disbursed on account of transactions of former periods	...
	Balance ...	65,655 1 1	Balance ...	25,470 10 7
	Add— Outstandings on account of the year	4,161 7 11	Add— Amount due for transactions during the year under review, but not yet disbursed ...	...
	Minus for bad debts ...	...		
	Value of the year's transactions	69,816 9 0	Real cost of year's transactions	25,470 10 7
				Rs. a. p.
	Value of the year's transactions			69,816 9 0
	Cost of the year's transactions			25,470 10 7
	Balance ...			44,345 14 5
	Deduct difference between the value of timber stock at the commencement and close of the year			1,078 15 5
	Balance ...			43,266 15 0
	Add ditto other live and dead stock ditto ditto			14,907 7 2
	Net results of the year. Profit ...			58,174 6 2

Annual account of Forest Revenue for 1875-76—(concluded).

Division.	Receipts.	Amount.	Disbursements.	Amount.
		Rs. a. p.		Rs. a. p.
JAUNSAR.	Amount of revenue realized in 1875-76	2,22,247 4 4	Amount disbursed in 1875-76	1,67,516 1 5
	Deduct— Amount realized on account of previous periods ...	16,803 14 0	Deduct— Amount disbursed on account of transactions of former periods	15,518 4 6
	Balance ...	2,05,443 6 4	Balance ...	1,51,997 12 11
	Add— Outstandings on account of the year	12,921 5 9	Add— Amount due for transactions during the year under review, but not yet disbursed ...	19,954 10 2
	Minus for bad debts ...	1,303 5 2		
	Value of the year's transactions	11,618 0 7		
	Total ...	2,17,061 6 11	Real cost of year's transactions	1,71,952 7 1
				Rs. a. p.
	Value of the year's transactions			2,17,061 6 11
	Cost of the year's transactions			1,71,952 7 1
	Balance ...			45,108 15 10
	Deduct difference between the value of timber stock at the commencement and close of the year			57,388 15 5
	Balance Loss ...			12,279 15 7
	Deduct value of live and dead stock			21,692 2 0
	Net results of the year. Profit ...			9,412 2 5
BHÁBRATH.		Rs. a. p.		Rs. a. p.
	Amount of revenue realized in 1875-76	1,00,479 15 6	Amount disbursed in 1875-76	84,599 8 4
	Deduct— Amount realized on account of previous periods ...	297 14 2	Deduct— Amount disbursed on account of transactions of former periods	11,040 7 3
	Balance ...	1,00,182 1 4	Balance ...	73,559 1 1
	Add— Outstandings on account of the year	2,046 6 0	Add— Amount due for transactions during the year under review but not yet disbursed ...	...
	Minus for bad debts ...	...		
	Value of the year's transactions	1,02,228 7 4	Real cost of year's transactions	73,559 1 1
				Rs. a. p.
	Value of the year's transactions			1,02,228 7 4
	Cost of the year's transactions			73,559 1 1
	Balance			28,669 6 3
	Deduct difference between the value of timber stock at the commencement and close of the year—Timber			27,547 7 0
	Balance			1,121 15 3
	Add other stock			28,509 6 0
	Net results of the year. Profit ...			29,631 5 3

Division.	Receipts.	Amount.	Disbursements.	Amount.
		Rs. a. p		Rs a. p.
GORAKHPUR.	Amount of revenue realized in 1875-76	49,378 5 4	Amount disbursed in 1875-76...	26,834 8 6
	Deduct— Amount realized on account of previous periods ...	552 12 6	Deduct— Amount disbursed on account of transactions of former periods	555 15 8
	Balance ...	48,825 8 10	Balance ...	26,278 8 10
	Add— Outstandings on account of the year ... Rs. 3,072 12 3		Add— Amount due for transactions during the year under review but not yet disbursed ...	1,884 0 9
	Minus of bad debts ... 200 0 0	2,872 12 3		
	Value of the year's transactions	51,698 5 1	Real cost of year's transactions	28,162 9 7
				Rs. a. p.
	Value of the year's transactions			51,698 5 1
	Cost of the year's transactions			28,162 9 7
	Balance			23,535 11 6
	Deduct difference between the value of timber stock at the commencement and close of the year			3,513 8 0
	Balance			20,022 3 6
	Add other stock			3,861 0 0
	Net results of the year. Profit ...			23,883 3 6
JHÁNSI DIVISION.		Rs. a. p.		Rs a. p.
	Amount of revenue realized in 1875-76	2,727 8 11	Amount disbursed in 1875-76 ..	2,093 6 8
	Deduct— Amount realized on account of previous periods ...	...	Deduct— Amount disbursed on account of transactions of former periods	...
	Balance ...	2,727 8 11	Balance ...	2,093 6 8
	Add— Outstandings on account of the year	...	Add— Amount due for transactions during the year under review but not yet disbursed ...	...
	Minus for bad debts ...	...		
	Value of the year's transactions	2,727 8 11	Real cost of year's transactions	2,093 6 8
				Rs. a. p.
	Value of the year's transactions			2,727 8 11
	Cost of the year's transactions			2,093 6 8
	Balance			634 2 3
	Add difference between the value of timber stock at the commencement and close of the year—			
		Rs. a. p.		
	Timber	1 0 4		
	Other stock	11 0 0		12 0 4
	Net results of the year. Profit ...			646 2 7

LALITPUR.

	Rs. a. p.		Rs. a. p.
Amount of revenue realized in 1875-76	3,889 10 2	Amount disbursed in 1875-76...	2,272 14 7
Deduct—		Dddduct—	
Amount realized on account of previous periods ...	...	Amount disbursed on account of transactions of former periods	...
Balance ...	3,889 10 2	Balance ...	2,272 14 7
Add—		Add—	
Outstandings on account of the year	61 7 3	Amount due for transactions during the year under review, but not yet disbursed	...
Minus for bad debts ...	...	Real cost of year's transactions ...	2,272 14 7
Value of the year's transactions ...	3,951 1 5		

	Rs. a. p.
Value of the year's transactions	3,951 1 5
Cost of the year's transactions	2,272 14 7
Balance ...	1,678 2 10
Add difference between the value of timber stock at the commencement and close of the year	56 7 6
Net results of the year. Profit ...	1,734 10 4

BAREILLY.

	Rs. a. p.		Rs. a. p.
Amount of revenue realized in 1875-76	8,298 1 9	Amount disbursed in 1875-76...	4,112 15 9
Deduct—		Deduct—	
Amount realized on account of previous periods ...	...	Amount disbursed on account of transactions of former periods	...
Balance ...	8,298 1 9	Balance ...	4,112 15 9
Add—		Add—	
Outstandings on account of the year...	...	Amount due for transactions during the year under review, but not yet disbursed ...	...
Minus for bad debts ...	...		
Value of the year's transactions	8,298 1 9	Real cost of year's transactions	4,112 15 9

	Rs. a. p.
Value of the year's transactions	8,298 1 9
Cost of the year's transactions	4,112 15 9
Balance	4,185 2 0
Add difference between the value of timber stock at the commencement and close of the year	...
Net results of the year. Profit ...	4,185 2 0

BIJNOR.

	Rs. a. p.		Rs. a. p.
Amount of revenue realized in 1875-76	16,876 2 6	Amount disbursed in 1875-76...	3,273 9 2
Deduct—		Deduct—	
Amount due after the close of the year	5,000 0 0	Amount disbursed on account of transactions of former periods	55 14 9
Amount realized on account of previous periods ...	...		
Balance ...	11,876 2 6	Balance ...	3,217 10 5
Add—		Add—	
Outstandings on account of the year...	11 0 0	Amount due for transactions during the year under review, but not yet disbursed ...	...
Minus for bad debts ...	...		
Value of the year's transactions	11,887 2 6	Real cost of year's transactions	3,217 10 5

	Rs. a. p.
Value of the year's transactions	11,887 2 6
Cost of the yeer's transactions	3,217 10 5
Balance ...	8,669 8 1
Add difference between the value of timber stock at the commencement and close of the year	140 0 0
Net results of the year. Profit ...	8,809 8 1

52. The following statement shows the receipts and charges of each division for 1875-76, as well as for the previous year, for the sake of comparison :—

Comparative Statement of Actual Receipts and Charges for the years 1874-75 and 1875-76.

Name of Division.	Receipts.		Charges under A. and B.		Receipts.		Charges.		Remarks.
	1874-75.	1875-76.	1874-75.	1875-76.	Increase.	Decrease.	Increase.	Decrease.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Direction Division ...	2	...	28,577	29,114	...	2	537	...	
Kumaun ditto ...	2,68,643	2,76,517	69,192	88,860	7,874	...	19,668	...	
Naini Tal Sub-division...	1,729	5.124	1,058	2,899	3,395	...	1,841	...	
Ránikhet ditto ...	6,000	15,693	12,780	15,673	9,693	...	2,893	...	
Garhwál Division ...	1,16,948	2,00,947	61,191	85,194	83,999	...	24,003	...	
Dehra Dún ditto ...	81,805	67,521	47,955	25,471	...	14,284	...	22,484	
Jaunsár ditto ...	2,62 017	2,22,247	1,92,911	1,67,516	...	39,770	...	25,395	
Bhágirathi ditto ...	2,84,376	1,00,480	3,94,3 6	84,599	..	1,83,896	...	3,09,787	
Gorakhpur ditto ...	39,299	49,378	35,425	26,835	10,079	...	...	8,590	
Jhánsi ditto ...	6,627	6,617	4,119	4,366	...	10	247	...	
Rohilkhand ditto ...	18,501	25,174	8,282	7,387	6,673	...	...	895	
Grand Total, Rs. ...	10,85,947	9,69,698	8,55,876	5,37,914	1,21,713	2,37,962	49,189	3,67,151	

Summary.

	Rs.
Increase in receipts ...	1,21,713
Decrease in charges ...	3,67,151
	4,88,864
Decrease in receipts...	2,37,962
Increase in charges ...	49,189
...	2,87,151
Balance in favour of 1875-76 ...	2,01,713

53. The foregoing statement shows that the surplus of 1875-76 exceeded that of 1874-75 by Rs. 2,01,713, whilst the net profits of the latter year, amounting as they did to only Rs. 2,51,395, have been more than doubled in 1875-76, the figures of which, *vide* tabular form given in para. 51, stand at Rs. 5,32,051, which, minus Rs. 2,51,395, exhibits a net increase of Rs. 2,80,656 in favour of the net profits of the year under review. These results are, in the Officiating Conservator's opinion, encouraging in the extreme, indicating, as they do, that the year just closed has been an exceedingly good and prosperous one in the financial interests of this Department.

54. The statements showing the receipts and charges for a series of years in connection with timber and wood brought to depôts and removed by purchasers, called for in Government of India letter No. 236, dated 14th March, 1876, Department of Revenue, Agriculture, and Commerce, will be found among the appendices to this report.

55. During the past year the receipts and charges on account of timber were as follow :—

	Receipts.	Charges.
	Rs.	Rs.
Depôt wood, &c.	5,55,121	2,76,048
Removed by purchasers	3,19,532	5,475
Total ...	8,74,653	2,81,523

The surplus on this account amounts to Rs. 5,93,130, and the percentage of charges to receipts does not exceed decimal 322.

56. Included in the figures of the preceding para. are the sleeper transactions of the year, and, as it may prove of interest to the Government if the receipts on this account are shown separately, the following summary may be accepted as affording the information :—

Forest Divisions.	Name of Railway supplied.	Number of sleepers supplied.		Rate and size of sleepers.		Amount realised.		
						Rs.	a.	p.
Kumaun ...	Rájputána (State) Railway.	Sál ...	1,352	2-8 each	6′×8″×6″	3,380	0	0
Jaunsár ...	Ditto ...	Deodar ...	*71,112	2-0 „	6′×8″×4″	1,42,224	0	0
Bhágirathi ...	Ditto ..	Do. ...	41,039	2-0 „	6′×8″×4½″	82,078	0	0
Jaunsár ...	Háthras, Muttra, Provincial (Light) Railway.	Do. ...	3,666	2-4 „	6′×8″×5″	8,248	8	0
Bhágirathi ...	Ditto ...	Do. rejected	902	0-8 „	6′×8″×4″	451	0	0
Total ...	...		118,071	...	...	2,36,381	8	0

* Two hundred and ninety-five of these sleepers did not appear in the half-yearly sleeper returns of last year, but they will find a place in the first return of this year.

57. In concluding this chapter or section of the report explains, with reference to the information asked for by the Government of India, in para. 8 of their letter No. 236, dated 14th March, 1876 (orders on 1874-75 Report,) that the figures given in the statement appended to para. 17 of His Honor the Lieutenant-Governor's resolution on the Conservator's report for 1874-75, appertain only to timber brought to depôt, and that as they seem to have been extracted from statement No. 26 of 1873-74 and 1874-75, respectively, (see appendices to the Conservator's reports for those years) they agree with the figures given in the reports for both years.

II.—GENERAL REMARKS.

58. Notwithstanding the intimation conveyed in the concluding section, para. 2, of the Government of India letter, No. 236, dated 14th March, 1876, and the

consequent pressure put upon Divisional Officers, it has not been found possible to complete any r gister of reserves in time for this report. Collecting data for them, while it is the preliminary step, is also almost the whole work, and involving as it does the correct settlement of disputed and intricate boundaries as well as the clear ascertainment of questionable privileges and doubtful rights of way, &c., the speed with which it is pushed on does not rest so much with Forest as with Civil and Revenue Officers. Great progress has been made though results are not paraded, and it is now tolerably certain that in every Forest Division of the North-Western Provinces, these registers will be completed before the next annual report appears.

The unanimity with which so many divisional officers far apart have refrained from hustling forward untrustworthy registers, is a guarantee for the painstaking that is being bestowed upon them, and should inspire confidence in the accuracy of such data, when eventually given, as have just been alluded to; but that immediate and particular knowledge which Government hopes to gather from them they will not furnish in a credible shape for some years to come, *viz.*, "a satisfactory account of the area entrusted to the care of the Conservator and of the Civil Officers." The areas that will first be entered in the registers must be taken from the forms which have annually exhibited first areas. Originally, these were nothing, but vague estimates which, copied from form to form, year after year, have come to be accepted by any forest officer assuming charge of a Division, who, even if he doubted them, would have no better means of arriving at truer results than had the previous estimator. Until checked by the Survey Branch, such figures merely mislead. In the only instance where they have hitherto been so checked the discrepancy is very great. The area of Government forests in the Dehra Dún Division, has, for the past three or four years, been steadily shown as 485, whereas under the test of survey it turns out to be 565 square miles. This is a difference of 80 square miles in a well known, settled and accessible valley, which affords unusual facilities for *coup d'œil* estimating and other sources of information. In drawing attention to this difference no account has been taken of the forest lands given away from, or the Patri forest area added to, the Division, as the one just serves for an off-set to the other; but the one or two tracts alluded to in paragraph 8 as yet remaining to be included in the list of Dehra Dún reserved forests, will probably raise the discrepancy to 90 square miles.

59. The Moradabad timber depôt has, during the past year, been managed by the forest officer in charge of the Kumaun Division. The very limited sales effected from this, the most favourably situated of them all, certainly justify the others having been abolished. But Captain Campbell recommends a continued trial being allowed for this particular one, as he observed some improvement after it was brought under Departmental management.

60. It is unfortunate for the forest officer of the North-Western Provinces that an Officiating Conservator taking charge only just in time to write this annual report is not in a position to accord to each by name that meed of praise which doubtless has been well deserved. This very shortness of incumbency, however, all the better enables him to express his complete satisfaction with the entire Conservator's office establishment. In gleaning the facts and figures herein given, he has had to put a strain upon it such as would not have been necessary under Mr. Greig himself, and he can therefore testify to its excellent system and ready efficiency. There are, no doubt, just as good officers under Government, but there can be none better. Mr. Braidwood deserves great credit for its present regulation, and of Mr. Jeffries, the Head Assistant, it may be recorded that he never requires more than the shortest possible notice to produce a satisfactory answer to any question, alike about the most remote or recent transaction. He has long worked for and fairly earned some increase of salary.

I. E O'CALLAGHAN,

Offg. Conservator of Forests, N.-W. P.

OFFICE OF CONSERVATOR OF FORESTS, N.-W. P.:
Naini Tal, the 5th August, 1876.

APPENDICES.

I.—Statement showing particulars connected with timber brought to depôt for the five years ending 31st March, 1876.

II.—Statement showing particulars connected with timber removed by purchasers for the same period.

III.—A memo. by Mr. George Greig, Officiating Conservator, on leave, explanatory of the manner in which the yield of the forests under the two systems "brought to depôt" and "removed by purchasers" is regulated.

IV.—Statement of timber on hand on 31st March, 1876, Form 15

V.— Ditto of other live and dead stock, ditto.

VI.—Annual Summary of Revenue and Expenditure, ditto 21

VII.—Ditto Abstract Account Current, ditto 22

VIII.—Ditto Outstandings and Liabilities, ditto 23

IX.—Ditto Statement of timber brought to depôts, ditto 24

X.—Ditto Timber account, ditto 25

XI.—Ditto Statement of revenue from timber sales, ditto 26

XII.—Ditto ditto of expenditure on timber brought to depôts, Form ... 27

XIII.—Ditto (Revised) Form No. 28 28

XIV.—Ditto Statement showing area of reserved forests.

XV.—Ditto ditto ditto of unreserved.

XV(*a*).—Ditto ditto ditto of unreserved forests under Commissioners of Divisions.

XVI.—Ditto ditto ditto of plantations.

XVII.—Ditto ditto ditto of forest tracts protected from fire.

XVIII.—Ditto ditto ditto of prosecutions for breaches of forest rules.

APPEN

FOREST DEPARTMENT, NORTH-

Statement showing the extent of timber operations (timber brought to Depôt) and the

Divisions.	Year.	Number of Trees felled.				Timber brought to Depôt for					
						Logs.		*Sleepers.*		*Other Scantlings.*	
		Sál.	Deodar.	Other kinds.	Total.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
Kumaun.	1871-72	4,357	...	60	4,417	785	34,650	6,016	8,021	...	...
	1872-73	4,212	...	1	4,213	1,145	60,125	15,022	20,418	25,154	46,479
	1873-74	2,319	...	614	2,933	15	1,777	1,297	3,321	73,840	125,181
	1874-75	2,536	...	621	3,157	...	...	2,553	5,682	34,354	51,460
	1875-76	*4,182	...	*426	4,608	948	44,300	595	1,190	33,129	54,818
	Total ...	17,606	...	1,722	19,328	2,893	140,852	25,483	38,632	166,477	277,938
Garhwál.	1871-72	1,098	...	...	1,098	227	2,965	11,285	15,046	18,852	Not known
	1872-73	2,540	...	5,872	8,412	20	742	13,556	18,074	44,883	Ditto.
	1873-74	278	...	7,435	7,713	...	...	689	1,818	76,636	81,482
	1874-75	345	...	3,887	4,232	...	...	1,582	3,171	45,701	73,929
	1875-76	5,299	...	16,640	21,939	502	10,892	1,213	5,978	97,515	159,665
	Total ...	9,560	...	33,834	43,394	749	14,599	28,325	44,087	2,83,587	315,076
Dehra Dún	1871-72	...	...	...	...	...	...	...	...	...	...
	1872-73	...	...	...	...	...	...	...	...	36 525	...
	1873-74	...	...	1,128	1,128	...	...	...	...	24,233	...
	1874-75	...	...	782	782	246	...	...	...	7 ,388	...
	1875-76	...	...	...	...	...	...	...	...	49,995	...
	Total ...	...	...	1,910	1,910	246	...	...	...	1,86,141	...
Jaunsár.	1871-72	...	247	2,795	3,042	...	...	21,201	44,279	44,207	11,062
	1872-73	...	272	...	272	...	...	107,099	142,426	16,460	11,332
	1873-74	...	108	3	111	...	...	277,039	369,527	5,629	2,270
	1874-75	...	209	1,172	1,381	...	...	59,134	78,845	39,835	10,664
	1875-76	...	1,049	2,212	3,261	...	...	21,392	28,522	50,957	18,580
	Total ...	...	1,885	6,182	8,067	...	...	485,865	663,599	157,088	53,908
	Carried over...	27,166	1,885	43,648	72,699	3,888	155,451	539,673	746,318	793,293	646,922

DIX I.

WESTERN PROVINCES.

amounts expended and realized on them for the five years 1871-72 *to* 1875-76, *inclusive.*

SALE. Total. Number of pieces.	SALE. Total. Cubic feet.	TIMBER SOLD. Pieces.	TIMBER SOLD. Cubic feet.	AMOUNT EXPENDED. Under AI. (old Budget Head) from 1871-72 to 1873-74 and AI. 1 (a. and b.) for 1874-75 and 1875-76.	AMOUNT EXPENDED. Deduct amount expended under old Head A I. in connection with timber removed by purchasers.	AMOUNT EXPENDED. Balance *bonâ fide* expended on timber, &c., brought to depôt.	Amount realized under old Head I of Revenue from 1871-72 to 1873-74 and under Heads I. 1 (a and b) during 1874-75 and 1875-76.	Remarks.
				Rs.	Rs.	Rs	Rs.	
6,801	42,671	329	13,243	30,191	198	29.993	33,441	
41,321	127,022	41,688	1,05,609	45,063	20	45,043	1,04,398	
75,152	130,279	42,957	1,35,738	28,849	5	28,844	1,59,444	
36,907	57,142	27,467	75,231	30,606	...	30,606	1,13,195	
34,672	100,308	39,020	1,03,664	40,968	...	40,968	1,06,836	* Including fire-lines.
194,853	457,422	151,461	433,485	1,75,677	223	1,75,454	5,17,314	
30,364	18,011	26,326	41,921	25,817	...	25,817	26,015	
58,459	18,816	33,717	The majority of this timber was not measured.	23,700	...	23,700	90,915	
77,325	83,300	51,181		38 000	...	38,000	64,833	
47,283	77,100	19,525		25,179	...	25,179	23,090	
99,230	176,535	79,683	112,956	40,078	...	40,078	96,223	
312,661	373,762	210,432	154,877	1,52,774	...	1,52,774	3,01,076	
...	...	...	...	24,501	24,501	...	...	
36,525	...	27,105	...	11,378	...	11,378	25,029	
24,233	...	13,791	...	12,246	...	12,246	17,529	
75,634	...	39,715	...	14,035	...	14,035	20,069	
49,995	...	67,307	...	3,539	...	3,539	9,892	
186,387	...	147,918	...	65,699	24,501	41,198	72,519	
65,408	55,341	33,470	59,915	1,98,664	...	1,98,664	1,19,314	The fellings for sleepers supplied by Jaunsár mostly occurred before 1871-72.
1,23,559	153,758	127,485	169,209	2,77,646	...	2,77,646	3,02,614	
2,82,668	371,797	199,923	265,367	2,32,138	...	2,32,138	4,82,890	
98,969	89,509	128,680	164,116	1,55,943	...	1,55,943	2,59,308	
72,349	47,102	106,284	155,726	1,20,492	...	1,20,492	2,19,211	
642,953	7 17,507	595,842	814,333	9,84,883	...	9,84,883	13,83,337	
1,386,854	1,548,691	1,105,658	14,02,695	13,79,033	24,724	13,54,309	22,74,246	

APPEN

FOREST DEPARTMENT, NORTH-

Statement showing the extent of timber operations (timber brought to Depôt) and the

Divisions.	Year.	Number of trees felled.				Timber brought to Depôt for					
						Logs.		*Sleepers.*		*Other Scantlings.*	
		Sál.	Deodar.	Other kinds.	Total.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
	Brought forward	27,166	1,885	43,648	72,699	3,888	155,451	539,673	746,318	793,293	646,922
Bhágirathi.	1871-72	...	15,245	...	15,245	...	...	154,600	266,745	...	...
	1872-73	...	...	...	...	...	...	234,535	354,723	...	...
	1873-74	...	...	...	...	594	17,500	227,456	323,234	...	...
	1874-75	...	...	180	180	8,087	...	92,465	123,287	110	217
	1875-76	...	62	...	62	1,523	...	31,477	41,969	343	151
	Total ...	...	15,307	180	15,487	10,204	17,500	740,533	1,109,958	453	368
Gorakhpur	1871-72	...	...	...	...	..	...	...	...	...	...
	1872-73	2,100	...	1,757	3,857	2,100	24,335	...	...	1,757	9,427
	1873-74	...	...	...	...	18	198	...	...	4,480	The majority of the timber was not measured.
	1874-75	4,420	...	...	4,420	544	4,374	...	...	16,964	
	1875-76	*15,252	...	(a.) 2,011	17,263	1,045	14,086	...	...	11,900	
	Total ...	21,772	...	3,768	25,540	3,707	42,993	...	...	35,101	9,427
	Grand Total...	48,938	17,192	47,596	113,726	17,799	215,944	1,280,206	1,856,276	828,847	656,717

Grand Total Receipts of the five years ... ...
Do. do. Charges do. do. ... ...

Value of timber in hand on 1st April, 1871-72 ... ...
Ditto ditto on 31st March, 1875-76 ... ...
Add balance in favour of the period... ... ...

Net result in favour of

* The figures appertaining to the Jhánsi and Rohilkhand

NOTE.—Previous to 1874-75, the sleeper transactions in the Jaunsár and Bhágirathi Divisions found no place
The Jhánsi and Rohilkhand Divisional figures are of no account as touching the importance of the question.

OFFICE OF CONSERVATOR OF FORESTS, N.-W. P.
Naini Tal, the 14th August, 1876.

DIX I.

WESTERN PROVINCES.

amounts expended and realized on them for the five years 1871-72 *to* 1875-76 *inclusive*—(concluded.)

SALE.		TIMBER SOLD.		AMOUNT OF EXPENDITURE.				Remarks.
Total.								
Number of pieces.	Cubic feet.	Pieces.	Cubic feet.	Under A I. (old Budget Head) from 1871-72 to 1873-74 and A I. 1 (a and b) for 1874-75 and 1875-76.	Deduct amount expended under old Head A I. in connection with timber removed by purchasers.	Balance *bond fide* expended on timber, &c., brought to depôt.	Amount realized under old Head I. of Revenue from 1871-72 to 1873-74 and under Heads I. 1 (a and b) during 1874-75 and 1875-76.	
				Rs.	Rs.	Rs.	Rs.	
1,336,854	1,548,691	1,105,653	1,402,695	13,79,033	24,724	13,54,309	22,74,246	
154,600	266,745	82,008	136,218	3,47,134	...	3,47,134	4,78,063	The fellings for sleepers commenced in the Bhágirathi Division in 1869-70.
234,535	354,723	211,825	295,592	3,85,474	...	3,85,474	6,64,579	
228,050	340,734	281,017	392,962	4,00,587	...	4,00,587	4,44,748	
100,662	123,504	115,646	167,024	3,69,302	...	3,69,302	2,81,030	
33,343	42,120	43,622	56,962	59,613	...	59,613	97,769	
751,190	1,127,826	734,118	1,048,758	15,62,110	...	15,62,110	19,66,189	
...	...	361	5,367	2,078	500	1,578	2,193	The sál trees felled in this Division were mostly of a very inferior class, dwarfed, rotten, &c. * Of these, 11,087 trees were felled when cutting fire lines. (a) felled when do. do.
3,857	33,762	1,443	10,598	5,979	2,000	3,979	1,535	
4,498	198	2,543	9,448	11,990	4,000	7,990	7,431	
17,508	4,374	5,864	15,824	20,739	...	20,739	11,681	
12,945	14,086	17,571	No measurements.	10,191	...	10,191	22,847	
38,808	52,420	27,782	41,237	50,977	6,500	44,477	45,727	
2,126,852	2,728,937	1,867,5[illegible]3	2,492,690	29,92,120	31,224	29,60,896	42,86,162	

...	...	...	...
...	...	...	...
	Balance	...	...
...	...	Rs.	1,92,288*
...	...	,,	3,76,909*
...	...	...	...
the five years		...	...

42,86,162
29,60,896
13,25,266
1,84,621
15,09,887

Divisions have been of course excluded from these amounts.
in the Annual Timber Returns, hence the figures in this Return will not always agree with those of the latter.
which induced the Government of India to call for this Return, so they have been excluded herefrom.

I. E. O'CALLAGHAN,

Offg. Conservator of Forests, N.-W. P.

APPEN

FOREST DEPARTMENT, NORTH-

Statement showing the receipts and charges of the above in connection with "timber

Forest Divisions.	Receipts.					
	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Kumaun ...	20,945 13 3	85,458 5 11	1,27,479 4 11	1,11,822 14 4	1,48,011 11 8	4,93,718 2 1
Garhwál ...	37,198 2 2	26,248 2 6	13,976 9 1	32,520 10 11	95,020 5 3	2,04,963 13 11
Dehra Dún ...	70,756 11 3	46,203 9 7	42,648 6 0	35,046 14 4	35,960 2 8	2,30,623 11 10
Jaunsár ...	4,688 0 5	13,041 14 0	27,180 7 5	763 10 11	1,228 14 2	46,902 14 11
Bhágirathi ...	41,013 3 6	19,609 0 0	19,355 4 11	965 15 6	2,046 11 9	82,990 3 8
Gorakhpur ...	11,307 10 5	12,452 5 7	10,812 2 4	22,712 0 3	22,255 12 8	79,539 15 3
Total ...	1,85,909 9 0	2,03,013 5 7	2,41,452 2 8	2,03,832 2 3	3,04,531 10 2	11,38,738 13 8

NOTE.—The revenue which has afforded this handsome surplus of Rs. 10,96,245-15 9 was realized chiefly from quantity of the

OFFICE OF CONSERVATOR OF FORESTS, N.-W. P.:
Dated Naini Tal, the 14th August, 1876.

DIX II.

WESTERN PROVINCES.

removed from the forests by purchasers" for the five years ending 31st *March*, 1875-76.

Charges.						Surplus.
1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	Total.	
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
198 0 0	20 0 0	5 0 0	5,774 6 4	5,355 10 1	11,353 0 5	4,82,365 1 8
...	...	...	...	...	...	2,04,963 13 11
24,500 12 3	...	...	37 8 0	...	24,538 4 3	2,06,085 7 7
...	...	...	46 0 10	...	46 0 10	46,856 14 1
...	...	...	...	...	...	82,990 3 8
500 0 0	2,000 0 0	4,000 0 0	55 8 5	...	6,555 8 5	72,984 6 10
25,198 12 3	2,020 0 0	4,005 0 0	5,913 7 7	5,355 10 1	42,492 13 11	10,96,245 15 9

the sale of dry wood and timber lying about in the forests, hence the impossibility of attempting to give the description and wood and timber sold.

I. E. O'CALLAGHAN,

Offg. Conservator of Forests, N.-W. P.

Appendix III., being a memorandum by MR. GEORGE GREIG, *Officiating Conservator, on leave, explanatory of the manner in which the yield of the forests is regulated.*

Note on the latter part of paragraph 7 and on paragraph 8 of Government of India No. 236, dated the 14th March, 1876.

THE Government of India asks "in what manner the yield of the forests under these two systems of working is regulated."

As regards *timber* the two systems are distinctly separate, in that timber "brought to depôt" is as a rule from green trees, whereas "timber removed by purchasers" is entirely from dead trees and refuse from departmental fellings, except in special cases, such as, for instance, the clearing of land for cultivation in Kumaun and Garhwál, and the clearing of fire-lines.

Timber brought to depot.—The system varies under different circumstances, but the general rule is for the Conservator to consult the divisional officer, and then to fix on a certain forest, and order that all the mature trees that can be spared be felled, and when the forest has been completely worked, close it and protect it from fire, grazing, &c.

The amount of timber to be felled annually is determined principally on the annual demand, and I feel fairly confident that all our divisions are being worked well *within* their capabilities. The two hill divisions of Jaunsár and Bhágirathi are perhaps exceptions to this, for it is well known that they could not supply *continually* the large amounts of deodar sleepers that have been got from them during the last five years, but they are capable of supplying renewals for the Rajputana railway, and small indents for short lines, such as the Sindia Railway, and such extensions of the provincial lines as are within reach, and this will probably be as much as will be required from them.

As regards my assertion that "all the divisions are being worked well within their capabilities," this is not based on any figures, merely on the experience of the past years, and on personal observation and enquiry.

A valuation survey on level ground is fairly reliable, but on hilly ground like in the Kumaun and Garhwál Divisions, I believe it to be worse than useless; I feel convinced that we can safely bring to depôts from one to one and-a-half lacs of sál and sein timber annually, and this is as much as the market demands; how to arrive at a reliable estimate of all the sál and sein timber that is in the Government forests between the Sárda and the Ganges is more than I know.

Commencing from next season some portion of the depôt timber will be met from clearings of mature, over-topping, crooked, and useless trees in the fire conserved blocks, but it is impossible to say how much, until after a year or two's experience.

In Gorakhpur this was started last season in one block of about 300 acres. See my report on Gorakhpur of February, 1876.

In Dehra Dún no green sál has been felled for the last three years. Next season we shall commence in one of the blocks that has been preserved for three years, and cut out all old, over-topping, &c., trees. We hope to close and preserve from fire the whole of the Dehra Dún forests which are free of rights (probably about 150 square miles), and therefore after a couple of years' experience of thinnings, there will be no difficulty in framing a fairly practical working plan for these closed forests.

The timber and wood removed by purchasers is regulated by nature—dead wood only is allowed to be removed. To check irregularities, and to keep the export under control, certain tracts only in each division are opened annually for the exercise of this trade. Bamboos are allowed to be exported from any part of our forests, except the closed (fire-conserved) blocks; and as it is an acknowledged fact with every one acquainted with our forests, that the supply is considerably beyond the demand, there does not appear to be any reason for curtailing this source of revenue, certainly not until we have some conclusive evidence that bamboos are becoming scarce.

APPENDIX IV.

No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876.

Name of Depôt.		Description of Timber.	Quantity. No. of pieces.	Quantity. Cubic feet. ′ ″ ‴	Estimated selling rate per 100 cubic feet. Rs. a. p.	Estimated value. Rs. a. p.	Total per Depôt. Rs. a. p.
KUMAUN DIVISION.	Rámnagar and Moradabad Depôts.	Sál logs	541	24,468 3 6	150 0 0	36,702 7 0	
		„ kolús	25	1,225 10 11	125 0 0	1,532 6 0	
		„ sleepers, I. class	5	18 0 0	125 0 0	22 8 0	
		„ ditto, II. „	427	854 0 0	100 0 0	854 0 0	
		„ ditto, III. „	2	2 8 0	75 0 0	2 0 0	
		„ kurries, I. „	22,434	34,778 0 6	125 0 0	43,472 8 10	
		„ ditto, II. „	11,028	21,112 5 8	75 0 0	15,834 5 8	
		„ ditto, III. „	916	1,446 1 0	50 0 0	723 0 8	
		Haldú ditto, I. „	4,666	7,540 0 0	62 8 0	4,712 8 0	
		„ ditto, II. „	479	767 9 4	37 8 0	287 14 8	
		„ ditto, III. „	27	42 6 0	25 0 0	10 10 0	
		Sein ditto, I. „	83	133 0 8	75 0 0	99 12 8	
		„ ditto, II. „	143	232 9 4	50 0 0	116 6 3	
		„ ditto, III. „	32	51 1 4	25 0 0	12 12 5	
		Dhauri ditto, I. „	145	238 0 8	62 8 0	148 12 6	
		„ ditto, II. „	129	190 10 0	50 0 0	95 6 8	
		„ ditto, III. „	8	12 9 4	25 0 0	3 3 3	
		Haldú botis, I. „	160	1,246 0 0	50 0 0	623 0 0	
		„ ditto, II. „	31	225 6 0	37 8 0	84 9 0	
		Jámun kurries, I. „	505	905 6 8	75 0 0	679 2 8	
		„ ditto, II. „	343	542 2 0	50 0 0	271 1 4	
		„ ditto, III. „	109	173 10 8	25 0 0	43 7 9	
		Bakli ditto, II. „	139	220 6 8	37 8 0	82 11 4	
		Carried over ...	...	...	...	1,06,414 10 8	

APPENDIX IV.

No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876—(continued).

Name of Depôt.	Description of Timber.	Quantity. Number of pieces.	Quantity. Cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
			''' " '	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Brought over ...	...	...	...	1,06,414 10 8	
Kumaun Division—(concluded.) Rámnagar and Moradabad Depôt.	Bákli Kurries, III. class	1	1 4 8	25 0 0	0 5 6	
	Jhingan ditto, I. „	109	69 5 4	37 8 0	26 0 7	
	Kudá ditto, I. „	79	129 8 8	37 8 0	48 10 4	
	Buhera ditto, I. „	171	272 2 8	37 8 0	102 1 4	
	Mútai ditto, I. „	45	65 6 8	37 8 0	24 9 4	
	Chir ditto, I. „	477	795 0 0	50 0 0	397 8 0	
	„ ditto, II. „	97	161 8 0	37 8 0	60 10 0	
	„ ditto, III. „	9	15 0 0	25 0 0	3 12 0	
	Buhera logs „	16	598 1 2	43 12 0	261 10 8	
	Dhauri ditto „	52	1,317 10 5	43 12 0	576 9 0	
	Haldú ditto	5	154 6 11	62 8 0	96 9 9	
	Jámun and sein logs	14	489 3 9	75 0 0	366 15 9	
	Sál planks, I. class	68	129 7 9	150 0 0	194 7 6	
	„ ditto, II. „	58	134 2 0	120 8 0	161 10 8	
	„ ditto, III. „	23	49 5 3	100 0 0	49 7 0	
	Sál gindas „	41	1,120 5 3	100 0 0	1,120 7 0	
	„ ballies „	554	..	0 8 0 each.	277 0 0	
	„ ballas „	22	107 11 6	50 0 0	53 15 8	
	Katrukh kurries, I. „	325	534 5 4	50 0 0	267 3 7	
	„ ditto, II. „	124	202 9 4	37 8 0	76 0 8	
	„ ditto, III. „	31	50 6 8	25 0 0	12 10 4	
	Total Kumaun Division ...	**44,698**	**102,827 3 7**	...	**1,10,592 15 4**	

Sanei ...	Sál logs		28	1,054 3 8	75 0 0		790 11 8	
	Sál kurries, I. class	... 15×6×5	1,905	5,953 1 6	118 12 0		7,069 5 4	
	„ ditto, I. „	... 12×5×4	1,765	2,941 8 0	100 0 0		2,941 10 8	
		Total ...	3,670	8,894 9 6				
	Sál kurries, II. class	... 15×6×5	140	437 6 0	87 8 0		382 13 0	
	„ ditto, II. „	... 12×5×4	1,817	3,028 4 0	81 4 0		2,460 8 4	
	„ ditto, II. „	... 10×5×4	1,318	1,830 6 8	75 0 0		1,372 14 8	
	„ ditto, II. „	... 8×4×4	840	746 8 0	62 8 0		466 10 8	
	„ ditto, II. „	... 6×4×4	136	90 8 0	50 0 0		45 5 4	
		Total ...	4,251	6,133 8 8				
	Sál butts rejected	... ...	379	...	8 0 0	per score.	151 9 7	
	Sein logs ...	... ...	3	45 7 11	37 8 0	per 100 c. ft.	17 1 11	
	Sal sleepers, III. class	... 9½×8×5	6	15 10 0	50 0 0		7-14 8	15,706 9 10
Simalchaur...	Sál logs ..	... ...	13	581 4 7	75 0 0		436 0 7	
	„ kolus	... ...	10	442 8 3	75 0 0		332 0 3	
	„ scantlings, II. class	... 21½×5×0	1	33 7 1	25 0 0		8 6 4	
	„ ditto, II. „	... 10½×6×8	1	29 2 0	25 0 0		7 4 8	
	„ ditto, II. „	... 7 ×5×2	1	11 8 1	25 0 0		2 14 8	
	„ ditto, II. „	... 7¼×4×7	1	9 6 2	25 0 0		2 6 0	
	„ ditto, II. „	... 7 ×5×6	1	13 2 9	25 0 0		3 4 11	792 5 5
		Total ...	5	97 2 1			...	
Kálpi ...	Kokát kurries, I. class	... 12×5×4	1,341	2,235 0 0	75 0 0		1,676 4 0	1,676 4 0
Haldúkhátá	Kokát kurries, I. class	... 12×5×4	5,511	9,185 0 0	37 8 0		3,444 6 0	
	„ ditto, I. „	... 10×5×4	1,820	2,527 9 4	37 8 0		947 14 8	
		Total ...	7,331	11,712 9 4				
		Carried over ...	...	...	...		4,392 4 8	18,175 3 3

APPENDIX IV.

No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876—(continued).

Name of Depôt.	Description of Timber.	Quantity. Number of pieces.	Quantity. Cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
			′ ″ ‴	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Brought over ...	...	...	...	4,392 4 8	18,175 3 3
Haldúkhatá	Kokát kurries II. class ... 12×5×4	62	103 4 0	25 0 0	25 13 4	
	„ ditto, II. „ ... 10×5×4	238	330 6 8	25 0 0	82 10 2	
	Total ...	300	433 10 8	...	...	4,500 12 2
Gorighát ...	Sein logs	502	10,892 1 11	62 8 0	6,807 9 7	6,807 9 7
	Sál kurries, I. class ... 12×5×4	33,420	55,700 0 0	100 0 0	55,700 0 0	
	„ ditto, I. „ ... 10×5×4	15,421	21,418 0 8	100 0 0	21,418 0 10	
	„ ditto, I. „ ... 8×4×4	5,891	5,236 5 4	87 8 0	4,581 14 2	
	„ ditto, I. „ ... 6×4×4	872	581 4 0	75 0 0	436 0 0	
	Total ...	55,604	82,935 10 0	...	...	
	Sál kurries, II. class ... 12×5×4	5,846	9,743 4 0	87 8 0	8,525 6 8	
	„ ditto, II. „ ... 10×5×4	3,118	4,330 6 8	87 8 0	3,789 3 9	
	„ ditto, II. „ ... 8×4×4	1,013	900 5 4	75 0 0	675 5 4	
	„ ditto, II. „ ... 6×4×4	100	66 8 0	62 8 0	41 10 8	
	Total ...	10,077	15,041 0 0	...	...	
	Sál kurries, III. class ... 12×5×4	2,104	3,506 8 0	62 8 0	2,191 10 8	
	„ ditto, III. „ ... 10×5×4	1,258	1,747 2 8	62 8 0	1,092 0 2	

DIVISION—(*continued.*)

Garhwal Forest	Jumnaghát	„ ditto, III. „	...	8×4×4	463	411	6	8	50	0	0	205	12	5			
		„ ditto, III. „	...	6×4×4	58	38	8	0	37	8	0	14	8	0			
			Total	...	3,883	5,704	1	4									
		Sál sleepers, I. class	...	12×6×12	420	2,520	0	0	150	0	0	3,780	0	0			
		„ ditto, I. „	...	10×6×12	237	1,185	0	0	150	0	0	1,777	8	0			
		„ ditto, I. „	...	10×5×10	201	697	11	0	150	0	0	1,046	14	0			
		„ ditto, I. „	...	6×8×6	4	8	0	0	137	8	0	11	0	0			
			Total	...	862	4,410	11	0									
		Sál sleepers, II. class	...	12×6×12	97	582	0	0	100	0	0	582	0	0			
		„ ditto, II. „	...	10×6×12	65	325	0	0	100	0	0	325	0	0			
		„ ditto, II. „	...	10×5×10	90	312	6	0	100	0	0	312	8	0			
		„ ditto, II. „	...	6×8×6	2	4	0	0	75	0	0	3	0	0			
			Total	...	254	1,223	6	0									
		Sál sleepers, III. class	...	12×6×12	20	120	0	0	75	0	0	90	0	0			
		„ ditto, III. „	...	10×6×12	8	40	0	0	75	0	0	30	0	0			
		„ ditto, III. „	...	10×5×10	31	107	7	8	75	0	0	80	11	8			
			Total	...	59	267	7	8									
		Sál joras, I. class	...	14×8×4	248	771	6	8	150	0	0	1,157	5	4			
		„ ditto, I. „	...	14×4×6	2	4	8	0									
		„ ditto, I. „	...	10×4×10	35	97	2	8									
		„ ditto, I. „	...	14×4×4	12	18	8	0									
		„ ditto, I. „	...	10×4×8	13	28	10	8									
		„ ditto, I. „	...	10×4×7	32	62	2	8	87	8	0	283	14	2			
		„ ditto, I. „	...	10×4×6	4	6	8	0									
		„ ditto, I. „	...	10×4×9	2	5	0	0									
		„ ditto, I. „	...	10×4×13	3	10	10	0									
		„ ditto, I. „	...	10×5×4	65	90	3	4									
			Total	...	416	1,096	0	0									
			Carried over	...	...	...				...		1,08,151	5	6	29,483	9	0

APPENDIX IV.

FORM No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876—(continued).

Name of Depôt.	Description of Timber.	Quantity. No. of pieces.	Quantity. Cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
			′ ″ ‴	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Brought over ...	...	...	...	1,08,151 5 6	29,483 9 0
Division—(concluded). Jumnaghat—(concluded).	Sál joras, II. class ... 14× 8× 4	45	140 0 0	100 0 0	140 0 0	
	„ ditto, III. „ ... 14× 8× 4	11	34 2 3	75 0 0	25 10 8	
	Sál planks, I. class ... 12× 4×12	1	4 0 0			
	„ ditto, I. „ ... 20×12× 4	2	13 4 0			
	„ ditto, I. „ ... 12×12× 5	9	45 0 0			
	„ ditto, I. „ ... 15× 8× 3	3	7 6 0			
	„ ditto, I. „ ... 12× 8× 3	25	50 0 0	125 0 0	242 6 10	
	„ ditto, I. „ ... 13×10× 4	1	3 7 4			
	„ ditto, I. „ ... 14×10× 4	3	11 8 0			
	„ ditto, I. „ ... 12×10× 4	11	36 8 0			
	„ ditto, I. „ ... 14× 8× 3	2	4 8 0			
	„ ditto, I. „ ... 14×12× 5	3	17 6 0			
	Total ...	60	193 11 4			
	Sál planks, II. class ... 12× 5×12	2	10 0 0	100 0 0	10 0 0	
	„ ditto, II. „ ... 12×10× 4	1	3 4 0	100 0 0	3 5 4	
	Total ...	3	13 4 0			
	Sál planks, III. class ... 12×5×12	1	5 0 0	75 0 0	3 12 0	
	„ beams, I. „	3,444	32,710 11 8	150 0 0	49,066 7 4	
	Sál beams, II. class	342	3,137 6 11	125 0 0	3,921 15 6	
	Sál beams, III. class	51	391 7 5	100 0 0	391 9 10	

Garhwal Forest		Kokát kurries, I. class ... 12×5×4	5,561	9,268 4 0	62 8 0		5,792 11 4	
		„ ditto, I. „ ... 10×5×4	1,519	2,109 8 8	62 8 0		1,318 9 2	
		Total ...	7,080	11,378 0 8				
		Kokát kurries, III. class 12×5×4	620	1,033 4 0	37 8 0		387 8 0	
		„ ditto, III. „ 10×5×4	211	293 0 8	37 8 0		109 14 4	1,69,565 5 2
		Total ...	831	1,326 4 8	...		...	
		Total Garhwal Division ...	**100,862**	**202,549 5 11**	...		**1,99,048 14 2**	**1,99,048 14 2**
Dehra Dún Division.	Dúdia ...	Planks	1,725	...	10 0 0	per score..	862 8 0	
		Sál ghát	175	...	30 0 0	„	262 8 0	
		Ballas	403	...	70 0 0	„	1,410 8 0	
		Ballies	920	...	0 6 0	„	17 4 0	
		Táran	480	...	0 10 0	„	15 0 0	
		Tors	1,922	...	10 0 0	„	961 0 0	3,528 12 0
	Lachiwála ...	Kurries	149	...	7 0 0	„	52 2 4	
		Bargas	12,145	...	3 0 0	„	1,821 12 0	
		Tors	8,057	...	5 0 0	„	2,014 4 0	3,888 2 4
	Bhániwála...	Tors	442	...	5 0 0	„	110 8 0	110 8 0
	Jhajrá ...	Tors	11	...	5 0 0	„	2 12 0	2 12 0
		Total Dehra Dun Division ...	**26,429**	...	...		...	**7,530 2 4**
Jaunsár Division.	Chakráta ...	Deodar kurries	3,420	5,582 0 5	150 0 0		8,373 0 10	
		„ planks...	1,249	1,249 0 0	1 8 0	each.	1,873 8 0	
		„ shingles	9,580	1,197 6 0	0 2 0	„	1,197 8 0	
		Rai kurries...	4	3 11 2	100 0 0	per cent.	3 14 11	
		„ planks...	1,258	1,258 0 0	1 0 0	each.	1,258 0 0	
		„ ballies	33	132 0 0	3 11 0	„	121 11 0	12,827 10 9
		Carried over ...	...	...	...		...	12,827 10 9

APPENDIX IV.

Form No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876—(continued).

Name of Depôt.		Description of Timber.	Quantity. Number of pieces.	Quantity. Cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
				′ ″ ‴	Rs. a. p.	Rs. a. p.	Rs. a. p.
Jaunsár Divsn.—(*contd.*)		Brought over ...	...	...	...	...	12,827 10 9
	Dún ...	Chír kurries ... 16×14×5	16	124 5 4	0 12 0 cubic foot.	93 5 4	
		" " ... 12×13×4	4	17 4 0	0 10 0 "	10 13 4	
		" " ... 11× 9×5	8,275	28,445 3 9	0 8 0 "	14,222 10 6	14,326 13 2
	In Dún, &c. ...	2nd class sleepers ... 6× 8×4	3,736	6,226 8 0	0 6 0 each.	1,401 0 0	1,401 0 0
	Karauli ...	Chír kurries	10,000	34,375 0 0	0 15 0 cubic foot	10,742 3 0	10,742 3 0
		Total Jaunsar Division ...	**37,575**	**78,611 2 8**	...	...	**39,297 10 11**
Bhágirathi Division.	Mayápur Depôt.	Deodar logs	573	...	6 0 0 each.	3,438 0 0	
		Ditto sleepers (rejected)	328	...	0 4 0	82 0 0	
		Sál	5	48 0 0	1 0 0 per cubic foot.	48 0 0	
		Sein	2	24 0 0	0 10 0 "	15 0 0	
		Sissum	1	14 0 0	0 10 0 "	8 12 0	
		Toon	1	12 0 0	0 12 0 "	9 0 0	
		Kokát	3	53 0 0	0 4 0 "	13 4 0	
		Ditto tors	251	...	10 0 0 per score.	125 8 0	
		Ditto kurries	9	...	10 0 0	4 8 0	
		Ditto sleepers	10	...	10 0 0	5 0 0	
		Ditto ballies	53	...	5 0 0	13 4 0	
		Ditto ballas	2	...	0 12 0 each.	1 8 0	
		Sandun ghát	6	...	0 12 0 "	4 8 0	
		Fire-wood	10,385 mds.	...	15 0 0 per 100 mds.	1,557 12 0	5,326 0 0
		Total Bhagirathi Division ...	**1,244**	**151 0 0**	...	...	**5,326 0 0**

Gorakhpur Division.	Sakhúa ...	Gole	260	...	25 0 0 per 100 pieces.	65 0 0		
		Gúrha	90	...	300 0 0 „	270 0 0		
		Bota	50	...	300 0 0 „	150 0 0		
		Sál logs	51	1,020 0 0	50 0 0 per 100 c. ft.	510 0 0		
		Ballas of all sorts	4,000	...	100 0 0 per 100 ballas.	4,000 0 0		
		Koro	154	...	8 0 0 per 100 kors.	12 5 0		
		Karma logs	40	240 0 0	50 0 0 per 100 c. ft.	120 0 0		
							5,127 5 0	
	Rajahwaghát	Sál logs	210	2,940 0 0	50 0 0 per „	1,470 0 0		
		Tops of ditto	24	...	2 0 0 each.	48 0 0		
							1,518 0 0	
	Kajrighola ...	Bota	49	...	3 0 0 each.	147 0 0	147 0 0	
	Sawárdhira	Sál logs	45	450 0 0	50 0 0 per 100 c. ft.	225 0 0		
		Ballas	128	...	1 0 0 each.	128 0 0		
		Gúrha	526	...	3 0 0 „	1,578 0 0		
		Fire-wood (pieces)	8	...	0 4 0 „	2 0 0		
							1,933 0 0	
	Birdghát ...	Sál logs	39	780 0 0	50 0 0 per 100 c. ft.	390 0 0		
							390 0 0	
	Rámgarh ...	Ballas	6,000	...	100 0 0 per 100 ballas.	6,000 0 0		
		Total Gorakhpur Division ...	**11,674**	**5,430 0 0**	...	...	**15,115 5 0**	
Jhánsi Forest	Jhánsi ...	Ballies	241	...	10 0 0 per 100.	24 1 7		
		Bamboos	761	...	2 0 0 „	15 3 6		
						39 5 1		
	Babíná ...	Ballies	55	...	10 0 0 „	5 8 0		
		Bamboos	68	...	2 0 0 „	1 4 6		
						6 12 6		
	Mau ...	Ballis ... ... / Bamboos	157	...	10 0 0 „	15 11 2		
			1,282	...	Total Jhánsi ...	...	61 12 9	
		Carried over ...	...	...	...	...	61 12 9	

APPENDIX IV.

Form No. 15.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber on hand on the 31st March, 1876—(concluded).

Name of Depôt.	Description of Timber.	Quantity. Number of pieces.	Quantity. Cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
			′ ″ ‴	Rs. a. p.	Rs. a. p.	
	Brought over ...	...	...	...	...	61 12 9
JHANSI DIVISION. *Lalitpur Forests.* — Lalitpur ...	Ballies	333	...	16 0 0 per rupee.	20 13 0	
	Bamboos	500	...	18 0 0 per cent.	2 8 0	
Talbahat ...	Ditto	30,869	...	18 0 0 ..	...	
Jakhaun ...	Ballies	819	...	16 0 0 per rupee	154 5 6	
Balabahat ...	Ditto	821	...	Ditto.	51 3 0	
Dúdhai ..	Ditto	573	...	Ditto.	51 5 0	
Thangana ...	Ditto	981	...	Ditto.	35 13 0	
Gonah ...	Ditto	505	...	Ditto.	61 5 0	
		35,401	...		31 9 0	408 13 6
				Total Lalitpur ...	...	
	Total Jhansi Division ...	**36,683**	...	...	...	**470 10 3**
ROHILKHAND DIVISION. *Bynor Forests* — Rehar ...	Sál ballies small, and very inferior ...	700	...	...	...	140 0 0
	Total Rohilkhand Division ...	...	...	...	...	**140 0 0**
	GRAND TOTAL ...	**259,865**	**3,89,569 0 2**	**GRAND TOTAL, Rs....**	...	**3,77,521 10 0**

NAINI TAL:
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX V.

FOREST DEPARTMENT, N.-W. P.

Statement showing the value of live and dead stock in the several divisions for the year ending 31st March, 1876.

Divisions.	Description of stock.									Grand Total.			Remarks.
	Elephants, number and value.				Buildings, number and value.				Value of Tools and other Plant.				
		Rs.	a.	p.		Rs.	a.	p.	Rs. a. p.	Rs.	a.	p.	
Kumaun	4	8,000	0	0	8	6,000	0	0	3,355 3 0	17,355	3	0	
Garhwál	2	3,000	0	0	4	5,022	0	0	2,547 6 0	10,569	6	0	
Dehra Dún	6	12,000	0	0	0	...			2,907 7 2	14,907	7	2	
Jaunsár	...	...			29	18,800	0	0	2,892 2 0	21,692	2	0	
Bhágirathi	...	...			6	20,550	0	0	7,959 6 0	28,509	6	0	
Gorakhpur	1	2,000	0	0	1	1,000	0	0	861 0 0	3,861	0	0	
Jhánsi Division (Jhánsi)	...	...			1	8	0	0	3 0 0	11	0	0	
Total ...	13	25,000	0	0	49	51,380	0	0	20,525 8 2	96,905	8	2	

NAINI TAL,
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPEN

FORM

FOREST DEPARTMENT,

Annual Summary of Revenue and Expenditure

REVE

Classification.	Direction.	Kumaun.	Garhwál.	Dehra Dún.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—REVENUE FROM WOOD AND BAMBOOS.				
1. Brought to depôt by departmental agency—				
(*a.*)—Timber and bamboos...	...	1,06,835 9 5	95,806 7 7	9,667 13 11
(*b.*)—Fire-wood and charcoal	...	...	416 10 0	224 4 3
(*c.*)—Sandal-wood ...	...	...	...	...
2. Wood and bamboos removed from the forests by purchasers, license-holders, and permit-holders ...	...	...	...	...
(*a.*)—Timber and bamboos ...	...	1,32,405 4 11	94,387 14 10	24,979 13 6
(*b.*)—Fire-wood and charcoal	...	15,606 6 9	632 6 5	10,988 5. 2
3. From confiscated, drift, and waif-wood	...	2,458 11 3	494 2 9	411 3 3
II.—REVENUE FROM MINOR PRODUCE.				
1. Grazing dues and sale of grass	...	9,633 1 5	4,669 0 11	11,769 1 3
2. Other minor produce ...	...	27,368 7 8	3,672 1 7	7,224 2 4
III.—DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.				
1. On wood	...	...	...	...
2. On other forest produce ...	...	...	...	...
IV.—MISCELLANEOUS.				
1. From fines and forfeitures	...	1,354 15 9	244 4 2	1,095 8 2
2. From refunds to the Department	...	201 10 5	55 7 5	1,040 8 2
3. From other sources ...	...	1,469 8 9	567 14 6	120 1 10
TOTAL, RECEIPTS ...	...	**2,97,333 12 4**	**2,00,946 6 2**	**67,520 13 10**

DIX VI.

No. 21.

NORTH-WESTERN PROVINCES.

of the different Divisions during 1875-76.

NUE.

Jaunsár.	Bhágirathi.	Gorakhpur.	Jhánsi.	Rohilkhand.	TOTAL.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,89,479 14 11	89,704 11 7	18,289 15 3	805 13 2	965 7 0	5,11,555 12 10
29,731 11 8	8,064 5 6	4,556 14 6	571 6 9	...	43,565 4 8
...	...	...	...	...	...
...	...	...	...	...	...
303 12 5	1,573 8 0	20,008 14 8	969 5 3	...	2,74,628 9 7
925 1 9	473 3 9	2,246 14 0	12 3 6	14,018 11 0	44,903 4 4
25 12 6	356 5 1	...	...	1,096 10 6	4,842 13 4
1,058 15 3	...	2,700 7 5	2,575 3 2	2,850 5 9	35,256 3 2
482 2 2	...	222 7 0	1,205 14 9	5,021 2 0	45,196 5 6
...	...	...	...	...	...
...	...	...	...	...	...
77 1 0	112 8 0	47 0 0	...	45 0 0	2,976 5 1
90 8 2	162 1 7	785 10 0	6 13 6	...	2,342 11 3
72 4 6	33 4 0	520 2 6	470 7 0	1,177 0 0	4,430 11 1
2,22,247 4 4	1,00,479 15 6	49,378 5 4	6,617 3 1	25,174 4 3	9,69,698 0 10

APPEN

FORM

FOREST DEPARTMENT,

Annual Summary of Revenue and Expenditure

EXPENDI

Classification.	Direction.	Kumaun.	Garhwál.	Dehra Dún.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
A.—CONSERVANCY AND WORKS.				
I.—COST OF TIMBER OPERATIONS.				
1. On wood and bamboos brought to dopôt by departmental agency	...	...	...	...
(*a.*)—Timber and bamboos	...	40,787 15 9	39,871 9 8	3,208 4 9
(*b.*)—Fire-wood and charcoal	...	180 0 0	206 9 11	330 12 10
(*c.*)—Sandal-wood ...	...	...	...	...
2. On wood and bamboos removed from the forests by purchasers, license-holders, and permit-holders ...	...	...	...	...
(*a.*)—Timber and bamboos	...	5,338 5 7	...	...
(*b.*)—Fire-wood and charcoal	...	17 4 6	...	...
3. On confiscated, drift, and waif-wood	...	...	...	5 4 0
II.—COST OF COLLECTING MINOR PRODUCE.				
1. Grazing and sale of grass	...	...	...	62 8 0
2. Other forest produce ...	...	6,877 12 8	9,435 13 8	1,349 0 0
III.—COST OF FOREST ORGANIZATION.				
1. Demarcation lines, and boundary pillars or marks	...	632 15 1	500 0 0	34 12 3
2. Working plans ...	...	...	...	...
3. Surveys	...	144 7 1	...	...
IV.—COST OF THE TREATMENT AND CREATION OF FORESTS.				
1. Natural Forests—				
(*a.*)—Protection from fire ...	...	3,349 3 8	3,000 0 0	453 13 3
(*b.*)—Fencing and enclosing	...	99 4 0	...	0 12 6
Carried over ...	...	57,427 4 4	53,014 1 3	5,445 3 7

DIX VI.

No. 28.

NORTH-WESTERN PROVINCES.

of the different Divisions during 1875-76—(continued.)

TURE.

Jaunsár.	Bhágirathi.	Gorakhpur.	Jhánsi.	Rohilkhand.	TOTAL.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
...	...	...	...	...	...
1,00,992 4 3	58,485 5 9	7,297 8 5	303 12 4	511 8 7	2,51,458 5 6
19,499 14 5	1,128 0 0	2,894 7 6	350 0 0	...	24,589 12 8
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	119 15 6	...	5,458 5 1
...	...	...	...	...	17 4 6
...	266 12 4	...	0 4 0	600 8 10	872 13 2
...	...	...	310 0 0	...	372 8 0
216 0 0	...	...	193 11 11	136 2 8	18,208 8 11
2,945 2 8	...	228 9 3	102 10 3	37 8 0	4,481 9 6
199 15 0	...	...	...	...	199 15 0
599 5 10	...	...	...	...	743 12 11
405 5 0	...	215 5 9	249 0 0	...	7,672 11 8
32 4 4	...	...	...	...	132 4 10
1,24,890 3 2	59,880 2 1	10,635 14 11	1,629 6 0	1,285 12 1	3,14,207 15 9

APPEN

FORM

FOREST DEPARTMENT,

Annual Summary of Revenue and Expenditure

EXPENDI

Classification.	Direction.	Kumaun.	Garhwál.	Dehra Dún.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward ...	...	57,427 4 4	53,014 1 3	5,445 3 7
(*c.*)—Improvement and conservation ...	...	377 4 9	...	519 8 3
(*d.*)—"Roboisement" or restoration of denuded areas ...	...	375 0 0	401 3 0	...
2. Artificial forests—				
(*a.*)—Formation ...	...	1,574 11 6	16 12 0	14 0 0
(*b.*)—Protection from fire ...	...	...	...	...
(*c.*)—Improvement and conservation ...	...	...	...	...
(*d.*)—Fencing and enclosing	...	...	5 2 0	...
V.—RENT OF LEASED FORESTS	...	...	...	351 0 0
VI.—COST OF COLLECTING DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.				
VII.—WORKS OF UTILITY FOR THE DEVELOPMENT OF FORESTS.				
1. Roads and bridges ...	...	12,994 11 8	9,312 10 9	...
2. Buildings and offices ...	47 6 0	2,880 5 7	132 13 5	308 15 0
3. Compensation for land taken up for forest purposes, or for extinction of forest rights ...	...	960 0 0	...	...
4. Other works ...	...	...	...	...
VIII.—COST OF DEPARTMENTAL CATTLE.				
1. Purchase of stock ...	...	...	...	...
2. Hire of stock ...	...	...	...	...
3. Feed and keep of cattle...	...	2,426 4 10	1,189 3 0	3,597 13 1
Carried over ...	47 6 0	79,015 10 8	64,071 13 5	10,236 7 11

DIX VI,

No. 28.

NORTH-WESTERN PROVINCES.

of the different Divisions during 1875-76—(continued).

TURE.

Jaunsár.	Bhágirathi.	Gorakhpur.	Jhánsi.	Rohilkhand.	TOTAL.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,21,890 3 2	59,880 2 1	10,635 14 11	1,629 6 0	1,285 12 1	3,14,207 15 9
2,106 0 0	...	72 9 4	264 0 0	...	3,339 6 4
2,737 8 10	...	1,181 15 4	65 0 0	...	4,760 11 2
88 0 0	...	291 13 0	...	...	1,985 4 6
...	...	...	...	...	...
...	...	138 12 6	...	...	138 12 6
...	...	67 12 7	...	...	72 14 7
...	10,000 0 0	...	...	...	10,351 0 0
9,985 15 10	...	...	100 0 0	4,162 8 9	36,555 15 0
2,499 2 5	...	127 10 7	54 0 9	14 14 3	6,065 4 0
336 2 5	...	...	...	...	1,296 2 5
329 5 2	...	23 14 0	37 5 9	...	390 8 11
...	...	...	...	...	...
...	...	...	...	...	...
...	...	407 8 8	...	...	7,620 13 7
1,42,972 5 10	69,880 2 1	12,947 14 11	2,149 12 6	5,463 3 1	3,86,784 12 9

APPEN

FORM

FOREST DEPARTMENT,

Annual Summary of Revenue and Expenditure

EXPENDI

Classification.	Direction.	Kumaun.	Garhwál.	Dehra Dún.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward ...	47 6 0	79,015 10 8	64,071 13 5	10,236 7 11
IX.—COST OF DEPARTMENTAL TOOLS & PLANT.				
1. For timber and wood operations ...	...	437 10 6	...	0 12 0
2. For other purposes ...	...	1,129 5 0	426 3 2	405 4 10
X.—MISCELLANEOUS CHARGES.				
1. Refunds ...	...	...	...	24 0 0
2. Law charges ...	...	4 6 0	26 0 0	...
3. Other charges ...	...	14 4 9	153 12 0	120 0 0
Total of A.—Conservancy and Works ...	**47 6 0**	**80,599 4 11**	**64,677 12 7**	**10,786 8 9**
B.—ESTABLISHMENTS.				
I.—SALARIES.				
1. Pay of Conservator ...	12,000 0 0	...	...	...
2. Pay of Control and Executive Officers ...	4,200 0 0	10,785 4 1	12,122 9 3	6,298 15 8
3. Protective establishments	...	6,401 15 10	3,315 1 9	4,514 3 3
4. Office establishments ...	6,634 13 5	1,256 3 3	1,380 6 4	1,766 5 5
5. Deputation and special allowances ...	...	4,800 0 0	...	...
II.—TRAVELLING ALLOWANCES.				
1. Conservator	2,340 3 0	...	...	...
2. Control and Executive Officers	568 0 0	2,450 13 3	2,547 3 1	1,203 7 7
3. Protective establishments	...	49 3 11	214 9 2	...
4. Office establishments ...	1,074 0 1	217 7 0	306 10 2	117 0 10
III.—CONTINGENCIES.				
1. Stationery ...	22 4 0	225 7 5	92 1 1	272 7 3
2. Carriage of tents and records ...	1,221 3 6	369 4 3	282 15 1	388 7 5
3. Pay of Police Guards ...	372 0 0	...	...	...
4. Sundries ...	407 8 9	94 12 6	141 5 0	74 4 5
5. Official postage ...	226 7 0	182 9 3	113 0 10	48 14 0
Total of B.—Establishments ...	**29,066 7 9**	**26,833 0 9**	**20,515 13 9**	**14,684 10 7**
Grand Total of all Expenditure ...	**29,113 13 9**	**1,07,432 5 8**	**85,193 10 4**	**25,470 10 7**

NAINI TAL:
The 30th June, 1876.

N.B.—This statement has been found correct in the

DIX VI.

No. 28.

NORTH-WESTERN PROVINCES.

of the different Divisions during 1875-76—(concluded.)

TURE.

Jaunsár.	Bhágirathi.	Gorakhpur.	Jhánsi.	Rohilkhand.	TOTAL.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,42,972 5 10	69,880 2 1	12,947 14 11	2,149 12 6	5,463 3 1	3,86,784 12 9
966 11 6	...	...	0 6 0	...	1,403 8 6
526 4 9	...	191 4 0	...	...	2,678 5 9
...	...	...	2 14 0	...	26 14 0
...	59 7 3	...	...	...	89 13 3
98 10 6	...	14 12 0	...	...	401 7 3
1,44,564 0 11	**69,939 9 4**	**13,153 14 11**	**2,153 0 6**	**5,463 3 1**	**3,91,384 13 0**
...	...	...	...	...	12,000 0 0
14,589 3 1	10,794 3 0	5,080 0 0	...	...	63,870 3 1
192 0 0	958 0 0	5,614 8 10	2,171 6 9	865 9 10	24,032 14 3
1,260 0 0	900 0 0	630 0 0	...	1,032 0 0	14,859 12 5
...	...	...	...	...	4,800 0 0
...	...	...	...	...	2,340 3 0
5,151 0 7	1,169 8 0	1,599 13 6	...	...	14,689 14 0
...	...	8 6 4	...	...	272 3 5
476 0 0	360 0 0	118 5 3	...	...	2,669 7 4
62 11 0	17 6 0	25 11 0	18 6 0	25 7 0	761 12 9
544 0 0	386 7 0	438 14 8	...	...	3,631 3 11
391 2 1	...	..	...	...	763 2 1
169 1 9	52 5 0	120 12 0	0 6 0	0 5 0	1,060 12 5
116 14 0	22 2 0	44 2 0	23 2 0	...	777 3 1
22,952 0 6	**14,659 15 0**	**13,680 9 7**	**2,213 4 9**	**1,923 5 10**	**1,46,528 11 9**
1,67,516 1 5	**84,599 8 4**	**26,834 8 6**	**4,366 5 3**	**7,386 8 11**	**5,37,913 8 9**

Accountant-General, North-Western Provinces Office.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX VII.

FORM No. 22.

FOREST DEPARTMENT, N.-W. P.

Annual Abstract Account of the Cash Transactions of the Forest Department in the North-Western Provinces.

Dr.

Year.	Heads of Account.	Rs.	a.	p.
1875-76.	*To cash balance in hand on 1st April, 1875.*			
	1. Direction Office Division	57	13	4
	2. Kumaun "	11,156	8	6
	3. Garhwál "	22,324	5	4
	4. Dehra Dún "	3,520	8	3
	5. Jaunsár "	16,758	4	3
	6. Bhagiráthi "	587	7	1
	7. Gorakhpur "	6,272	0	11
		60,676	15	8
	To revenue received during the year.			
	2. Kumaun Division	2,97,333	12	4
	3. Garhwál "	2,00,946	6	2
	4. Dehra Dún "	67,520	13	10
	5. Jaunsár "	2,22,247	4	4
	6. Bhagiráthi "	1,00,479	15	6
	7. Gorakhpur "	49,378	5	4
	8. Jhánsi "	6,617	3	1
	9. Rohilkhand "	25,174	4	3
		9,69,698	0	10

Cr.

Year.	Heads of Account.	Rs.	a.	p.
1875-76.	*By expenditure of the department during the year.*			
	1. Direction Office Division	29,113	13	9
	2. Kumaun "	1,07,432	5	8
	3. Garhwál "	85,193	10	4
	4. Dehra Dún "	25,470	10	7
	5. Jaunsár "	1,67,516	1	5
	6. Bhagiráthi "	84,599	8	4
	7. Gorakhpur "	26,834	8	6
	8. Jhánsi "	4,366	5	3
	9. Rohilkhand "	7,386	8	11
		5,37,913	8	9
	By advances made during the year.			
	1. Direction Office Division	534	0	0
	2. Kumaun "	1,550	0	0
	3. Garhwál "	100	0	0
	4. Dehra Dún "	3,161	13	8
	5. Jaunsár "	62,135	14	0
	6. Bhagiráthi "	2,953	10	0
	7. Gorakhpur "	10,299	4	0
		80,734	9	8

1875-76.

To remittances from State Treasuries during the year.

1.	Direction Office Division	...	...	29,155 0 0
2.	Kumaun "	...	...	1,08,000 0 0
3.	Garhwál "	...	...	88,592 0 0
4.	Dehra Dún "	...	...	25,100 0 0
5.	Jaunsár "	...	...	1,66,394 0 0
6.	Bhagiráthi "	...	...	90,839 0 0
7.	Gorakhpur "	...	...	21,400 0 0
8.	Jhánsi "	...	...	4,366 5 3
9.	Rohilkhand "	...	...	7,624 0 2
				5,41,470 5 5

To transfer remittances from other departments during the year.

1.	Direction Office Division	...	...	54 11 3
2.	Kumaun "	...	...	288 10 0
3.	Garhwál "	...	...	830 4 0
5.	Jaunsár "	...	...	2,058 6 6
6.	Bhagiráthi "	...	...	6,176 4 0
7.	Gorakhpur "	...	...	12 2 0
				9,420 5 9

To advances recovered during the year.

1.	Direction Office Division	...	...	534 0 0
2.	Kumaun "	...	...	205 0 0
3.	Garhwál "	...	...	500 0 0
4.	Dehra Dún "	...	...	1,968 8 0
5.	Jaunsár "	...	...	44,550 0 0
6.	Bhagiráthi "	...	...	...
7.	Gorakhpur "	...	...	11,355 10 8
				59,113 2 8

1875-76.

By remittances of revenue to State Treasuries.

1.	Direction Office Division	...	...	480 12 0*
2.	Kumaun "	...	...	2,69,945 8 5*
3.	Garhwál "	...	...	1,96,386 15 11
4.	Dehra Dún "	...	...	64,897 9 10
5.	Jaunsár "	...	...	14,090 7 10
6.	Bhagiráthi "	...	...	9,557 7 0
7.	Gorakhpur "	...	...	46,335 12 7
8.	Jhánsi "	...	...	6,042 3 1
9.	Rohilkhand "	...	...	15,411 11 6
				6,23,148 8 2

By transfer remittances to other departments.

2.	Kumaun Division	...	...	30,959 11 11
3.	Garhwál "	...	...	4,808 14 11
4.	Dehra Dún "	...	...	2,370 4 1
5.	Jaunsár "	...	...	2,08,156 12 6
6.	Bhagiráthi "	...	...	90,922 8 6
8.	Jhánsi "	...	...	575 0 0
9.	Rohilkhand "	...	...	10,000 0 0
				3,47,793 3 11

By remittance loan to Jaunsár Forest Division.

				10,000 0 0
6.	Bhagiráthi Division, as *per contra*		...	10,000 0 0

* Include fund subscriptions paid into Treasury.

APPENDIX VII.

FORM No 22.

FOREST DEPARTMENT, N.-W. P.

Dr. *Annual Abstract Account of the Cash Transactions of the Forest Department in the North-Western Provinces*—(concluded). *Cr.*

Year.	Heads of Account.	Rs.	a.	p.	Year.	Heads of Account.	Rs.	a.	p.
	To fund deductions during the year, Government of India.					*To cash balances in hand of Executive Officers on 31st March, 1876.*			
1875-76.	1. Direction Office Division	480	12	0	1875-76.	1. Direction Office Division	153	10	10
	2. Kumaun "	222	0	0		2. Kumaun "	7,318	4	10
		702	12	0		3. Garhwál "	26,703	6	4
						4. Dehra Dún "	2,209	7	11
						5. Jaunsár "	10,108	11	4
						6. Bhagiráthi "	49	8	9
	To remittance loan from Bhagiráthi Forest Division.					7. Gorakhpur "	4,948	9	10
	5. Jaunsár Division	10,000	0	0			51,491	11	10
		10,000	0	0					
	GRAND TOTAL RS. ...	16,51,081	10	4		GRAND TOTAL RS. ...	16,51,081	10	4

NAINI TAL:

Dated 30*th June*, 1876.

N. B.—This statement has been examined and found correct in the office of Accountant-General, N.-W Provinces.

I. E. O'CALLAGHAN,

Offg. Conservator of Forests, N.-W. Provinces.

APPENDIX VIII.

FORM No. 23.

FOREST DEPARTMENT, N.-W. P.

Annual statement of Outstandings and Liabilities of the Department on account of Contractors and Disbursers for the year 1875-76.

Divisions.	Department Debtor.			Department Creditor.			Balance Due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year	To Department (Outstandings)	By Department (Liabilities).
	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs a. p.	Rs. a. p	Rs. a. p.	Rs. a. p.
1. Direction, Office Division	...	534 0 0	534 0 0	...	534 0 0	534 0 0	...	...
2. Kumaun Division ...	276 14 5	81,118 6 5	81,395 4 10	6,389 8 3	1,09,763 6 1	1,16,152 14 4	*a* 35,800 5 1	1,042 11 7
3. Garhwál do. ...	1,000 0 0	80,551 10 9	81,551 10 9	4,534 9 9	68,088 11 0	72,623 4 9	7,276 4 2	16,154 10 2
4. Dehra Dún do. ...	...	5,647 9 6	5,647 9 6	4,483 5 6	5,325 11 11	9,809 1 5	4,161 7 11	...
5. Jaunsár do. ...	1,501 1 9	1,88,143 0 4	1,89,644 2 1	15,520 9 0	1,93,390 4 8	2,08,910 13 8	*b* 39,221 5 9	19,954 10 2
6. Bhagiráthi do. ...	11,040 7 3	1,27,976 8 2	1,39,016 15 5	1,844 4 2	1,42,172 11 3	1,44,016 15 5	*c* 5,000 0 0	...
7. Gorakhpur do. ...	1,828 7 8	55,155 8 1	56,983 15 9	8,888 5 4	49,870 1 4	58,758 6 8	*d* 3,658 7 8	1,884 0 9
8. Jhansi do. ...	...	1,387 15 2	1,387 15 2	93 3 0	1,356 3 5	1,449 6 5	* 61 7 3	...
9 Rohilkhand do. ...	55 14 9	2,249 9 6	2,305 8 3	...	2,316 8 3	2,316 8 3	† 11 0 0	...
Total ...	**15,702 13 10**	**5,42,764 3 11**	**5,58,467 1 9**	**41,753 13 0**	**5,72,817 9 11**	**6,14,571 6 11**	**95,140 5 10**	**39,036 0 8**

a. Of this amount Rs. 2,245 are "Advances recoverable."
b. Ditto „ 26,300 ditto.
c. Ditto „ 2,954 ditto.
d. Ditto „ 586 ditto.

None of which appear as "outstandings" in (revised) Form No. 28.

* Belongs to Lalitpur.
† Ditto to Bijnor.

NAINI TAL:
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. Provinces.

APPENDIX IX.

FORM No. 24.

FOREST DEPARTMENT, N.-W. P.

Statement of Timber brought to Depôts, from the different Forest Divisions for the year ending 31st March, 1876.

Name of River or Division.	Forest.	Description of Timber.	Pieces, Number.	Estimated cubic feet.				Total of each River or Division.				Remarks.
								Pieces.	Cubic Feet.			
				′	″	(″						
Kumaun Division ...		Sál logs	847	41,259	9	8						
		„ kurries	24,468	37,500	7	4						
		„ kolus	38	1,818	4	11						
		„ sleepers ...	595	1,190	0	0						
		„ other kinds ...	1,525	3,913	8	9						
		Huldu kurries ...	2,688	4,331	10	0						
		„ logs and botos ...	6	192	11	1						
		Sein kurries ...	1,779	2,912	6	0						
		Tún planks	100	166	8	0						
		Dháuri logs and kurries ...	310	2,144	0	3						
		Jáman „ „ ...	1,042	2,231	3	3						
		Bakli kurries ...	84	132	2	8						
		Kúda „ ...	15	24	2	0						
		Jhingan „ ...	195	308	4	0						
		Buherá logs and kurries ..	78	695	7	2						
		Matun kurries ..	21	30	0	0						
		Katrúkh „ ...	480	787	9	4						
		Chir „ ...	401	668	4	0						
								34,672	100,308	2	5	
Garhwál Division ...		Sál kurries	70,264	104,722	9	4						
		„ sleepers ...	1,213	5,978	0	8						
		„ other kinds ...	4,761	39,856	3	0						
		Kokát ballas, bullies, and tors	14.479	...								
		Sein logs	502	10,892	1	11						
		Bákli beams	100	2,359	4	10						
		Sein and kokát kurries ...	7,911	12,726	8	0						
								99,230	176,535	3	9	

Dehra Dún Division ...	Sál kurries	914	...		
	„ ghats	260	...		
	Sein kurries	352	...		
	Kokát and Jáman kurries	577	...		
	Jáman planks	1,133	...		
	Tún „	566	...		
	Sleepers	1,673	...		
	Ballas	299	...		
	Bullies	920	...		
	Other kinds	8,124	...		
	Bamboos	35,177	...	49,995	...
Jaunsár Division ...	Deodar logs	10	266 10 2		
	„ sleepers ...	21,392	121 3 4		
	„ kurries ...	9.317	15,768 6 1		
	„ planks and shingals	11,127	...		
	„ condemned planks	...	...		
	„ ditto kurries	110	...		
	Rai kurries	108	152 2 11		
	„ planks	5,958	...		
	„ condemned planks ...	250	...		
	„ ditto kurries ...	1.419	...		
	„ bullies	319	...		
	Other timber	22,339	2.392 0 4	72,349	18,700 10 10
Bhágirathi Division ...	Deodar logs	1,523	...		
	„ sleepers ...	31,477	...		
	Sál pieces	5	48 0 0		
	Other timber	338	103 0 0	33,343	151 0 0
Gorakhpur Division ...	Sál logs	1,045	14,086 2 1		
	Karma logs	40	240 0 0		
	Other kinds	11,852	...		
	Fire-wood (pieces) ...	8	...	12,945	14,326 2 1
Jhánsi Division ...	Bullies	831	...		
	Bamboos	153.801	...	154,632	...
Rohilkhand Dn. (Bijnor)...	Sál bullies	3.743	...	3,743	...
	Grand Total, Pieces ...	...	...	460,909	310,021 7 1

NAINI TAL :
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPEN

FORM

FOREST DEPARTMENT,

Annual Timber

Headings and Divisions.	Particulars.										
	Sál Logs.	Sál Kurries.	All other kinds of Sál.	Deodar Logs.	Deodar Kurries and Sleepers.	Deodar Planks and Rai Kurries, &c.	Rai Bullies, Haldu Kurries and Logs, &c.	Chír Kurries.	Other kinds.	Pieces.	Total.
I.—Stock in hand at the Depôts of the following Divisions at the commencement of the year:—											
Kumaun ...	392	39,997	2,184	...	...	...	3,191	...	3,906	49,670	
Garhwál ...	122	38,561	2,442	...	...	...	...	..	41,216	82,341	
Dehra Dún ..	...	103	240	...	...	...	...	...	43,594	43,937	
Bhágirathi ...	...	...	...	...	12,534	...	...	..	110	12,644	
Jaunsár ...	...	...	...	...	67,152	8,889	...	...	...	76,041	
Gorakpur ...	429	...	...	...	...	...	...	...	15,994	16,423	
Jhánsi ...	...	...	...	...	...	...	...	...	14,558	14,558	
Rohilkhand (Bijnor)	...	...	...	...	...	...	...	...	...	...	295,614
II.—Timber received at Depôts from the Forests during the year:—											
Kumaun ...	847	24,468	2,158	...	...	...	2,694	...	4,505	34,672	
Garhwál ...	...	70,264	5,974	...	...	...	...	...	22,992	99,230	
Dehra Dún ...	...	914	260	...	...	...	...	...	48,821	49,995	
Bhágirathi ...	...	...	5	1,523	31,477	...	...	...	338	33,343	
Jaunsár ...	...	...	...	10	30,709	18,972	319	...	22,339	72,349	
Gorakhpur ...	1,045	...	...	...	...	...	...	...	11,900	12,945	
Jhánsi ...	...	...	...	...	...	...	...	...	154,632	154,632	
Rohilkhand (Bijnor)	...	...	3,743	...	...	...	...	...	...	3,743	460,909
Grand Total, Pieces			...		...		...		...	...	**756,523**

NAINI TAL:
The 14th August, 1876.

DIX X.

B.

NORTH-WESTERN PROVINCES.

Account for 1875-76.

PARTICULARS.

Headings and Divisions.	Sál Logs.	Sál Kurries.	All other kinds of Sál.	Deodar Logs.	Deodar Kurries and Sleepers.	Deodar Planks and Rai Kurries, &c.	Rai Bullies, Huldu Logs, Planks, and Kurries, &c.	Chír Kurries.	Other kinds.	Pieces.	Total.
I.—Timber removed by purchasers from Depôts during the year :—											
Kumaun ...	698	30,087	2,563	...	...	...	517	...	5,155	39,020	
Garhwál ...	4	30,656	2,442	...	..	...	...	...	46,577	79,679	
Dehra Dún ...	...	914	325	...	...	...	...	..	66,068	67,307	
Bhágirathi ...	...	...	...	950	42,572	...	...	...	110	43,632	
Jaunsár ...	...	...	...	10	89,218	12,728	284	...	4,044	106,284	
Gorakhpur ...	1,103	...	...	...	...	...	...	...	16,468	17,571	
Jhánsi ...	...	...	...	...	...	...	...	..	132,440	132,440	
Rohilkhand (Bijnor)	...	...	3,043	...	...	...	...	...	...	3,043	488,976
II.—Timber lost, condemned, converted, or otherwise removed from the Depôt during the year :—											
Kumaun ...	...	...	554	..	...	...	...	...	70	624	
Garhwál ...	77	684	26	...	...	...	...	..	243	1,030	
Dehra Dún ...	...	54	...	...	...	...	...	...	142	196	
Bhágirathi ...	...	...	...	...	1,111	...	...	...	...	1,111	
Jaunsár ..	...	...	...	...	1,487	3,042	2	...	..	4,531	
Gorakhpur ...	26	...	...	...	...	...	...	...	97	123	
Jhánsi ...	...	...	...	...	...	...	...	...	67	67	
Rohilkhand (Bijnor)	...	...	...	...	...	...	...	...	...	...	7,682
III.—Stock in hand at the close of the year at the following Depôts :—											
Kumaun ...	541	34,378	1,225	...	...	...	5,368	...	3,186	44,698	
Garhwál ...	41	77,485	5,948	...	...	...	...	...	17,388	100,862	
Dehra Dún ...	...	49	175	...	...	...	...	...	26,205	26,429	
Bhágirathi ...	...	...	5	573	328	...	...	...	338	1,244	
Jaunsár ...	...	...	...	...	7,156	12,091	33	...	18,295	37,575	
Gorakhpur ...	345	...	...	...	...	...	...	...	11,329	11,674	
Jhánsi ...	...	...	...	...	...	...	...	...	36,683	36,683	
Rohilkhand (Bijnor)	...	...	700	...	...	...	...	...	..	700	259,865
Grand Total, Pieces											**756,523**

I. E. O'CALLAGHAN,

Offg. Conservator of Forests, N.-W. P.

APPENDIX XI.

FORM No. 26.

FOREST DEPARTMENT, N.-W. P.

Statement showing the amount realised on account of the different classes of timber sold during 1875-76.

Divisions.	No. of logs and pieces sold.	Cubical contents.	Amount realised and due on account of timber sold.	Average amount per log or piece.	Average cubical contents of logs or pieces.	Average amount per 100 cubic feet.
		′ ″ ‴	Rs. a. p.	Rs. a. p.	′ ″ ‴	Rs. a. p.
Kumaun	39,020	103,664 1 8	1,14,137 0 7	2 14 10	2 7 10	110 1 7
Garhwál	79,679	112,955 10 1	93,514 12 11	1 2 9	1 5 0	82 12 7
Dehra Dún	67,307	... *	9,667 13 11	0 2 3	...	...
Jaunsár	106,284	... *	1,99,968 1 3	1 14 1	...	...
Bhágirathi	43,632	... *	89,006 0 2	2 0 7	...	...
Gorakhpur	17,571	... *	17,231 11 3	0 15 8	...	...
Jhánsi	132,440	... *	805 13 2	0 0 1 1/6	...	...
Rohilkhand	3,043	... *	976 7 0	0 5 1	...	...
Total ...	**4,88,976**	...	**5,25,307 12 3**	**1 1 2**	...	...

Remarks.		
Pieces	182	488,976
Timber sold in previous years remaining unremoved at the commencement of the year...	4,9,158	3,562
Timber sold during the year ...		485,606
Total ...		
Timber remaining unremoved at the close of the year ..		
Balance removed from depôts by purchasers during the year ...		

Deduct amount received in advance in 1874-75 ...	1,283 2 0
Balance ...	5,24,024 10 3
Deduct amount due but not realised during the year	22,579 10 1
Balance ...	5,01,445 0 2
Add amount realised on account of former years	1,136 13 11
Add also amount realised for other kinds of timber under I. 1., (*a*) and (*b*)	45,921 8 5
Add also amount received in advance for timber for 1876-77 ...	6,617 11 0
Total shown as Revenue on account of timber sales, under heads I. 1. (*a*) and (*b*)	5,55,121 1 6

* In these divisions most of the timber was disposed of at so much per log or piece, so the cubical contents of the full amount sold cannot be given, whilst, with reference to the requirements of columns 6 and 7 of this statement, it has been deemed advisable to omit all mention of the contents even of so much timber as was sold by cubic measurement.

NAINI TAL:
Dated 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. Provinces.

APPENDIX XII.

FORM No. 27.

FOREST DEPARTMENT, N.-W. P.

Statement showing the amount expended on account of Timber received from the different Forest divisions during 1875-76.

Name of Division.	No. of logs and pieces.	Cubical contents.	Timber expenses.	Conservancy expenses, cost of establishment, &c., of the department, including Direction.	Total amount expended including Direction.	Average amount paid per log or piece.	Average cubical contents per log or piece.	Average amount paid per 100 cubic feet.	Remarks.
		′ ″ ‴	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	′ ″ ‴	Rs. a. p.	
Kumaun ...	34,672	100,308 2 5	40,787 15 9	71,366 13 4	1,12,154 13 1	3 3 9	2 10 8	111 12 9	As the expenditure shown in this statement has to do with timber either brought on to stock last year (1874-75) or remaining to be brought on to stock during 1876-77, the averages in column 7 afford no criterion of the actual cost per log or piece.
Garhwál ...	99,230	176,535 3 9	39,871 9 8	49,938 5 9	89,809 15 5	0 14 5	1 9 4	50 13 11	
Dehra Dún ...	49,995	... *	3,206 4 9	22,633 12 10	25,842 1 7	0 8 3	...	...	
Jaunsár ..	72,349	... *	1,00,992 4 3	78,216 12 3	1,79,209 0 6	2 7 7	...	...	
Bhágirathi ...	33,343	... *	58,485 5 9	32,885 9 4	91,370 15 1	2 11 10	...	...	
Gorakhpur ...	12,945	14,326 2 1	7,297 8 5	20,381 14 2	27,679 6 7	2 2 2	1 1 3	193 3 3	
Jhánsi ...	154,632	... *	303 12 4	4,097 12 0	4,401 8 4	0 0 5	...	...	
Rohilkhand ...	3,743	... *	511 8 7	6,934 3 7	7,445 12 2	† 0 14 2	...	...	
Total ...	**460,909**	...	**2,51,458 5 6**	**2,86,455 3 3**	**5,37,913 8 9**	...	...	...	

NAINI TAL:
The 14th August, 1876.

* As in these divisions the logs, &c., consist mostly of timber sold in the log or piece, cubical measurements cannot be given with any degree of accuracy.

† In striking this average, the Bareilly expenditure has been excluded, as Bijnor alone has timber transactions.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX XIII.

FORM No. 28.

FOREST DEPARTMENT, N.-W. P.

Annual Account of Forest Revenue for 1875-76.

Receipts.	Rs.	a.	p.	Disbursements.	Rs	a.	p.
Amount of revenue realised in 1875-76	9,69,698	0	10	Amount disbursed in 1875-76	5,37,913	8	9
Deduct— Amount realised on account of previous periods	31,459	0	1	*Deduct—* Amount disbursed on account of transactions of former periods	28,447	8	7
Balance ...	**9,38,239**	**0**	**9**	**Balance** ...	**5,09,466**	**0**	**2**
Add— Outstandings on account of the year	63,056	0	5	*Add—* Amount due for transactions during the year under review, but not yet disbursed	39,036	0	8
Minus for bad debts	3,340	6	0				
Total ...	**59,715**	**10**	**5**	**Real cost of year's transactions, Rs.** ...	**5,48,502**	**0**	**10**
Value of the year's transactions, Rs. ...	**9,97,954**	**11**	**2**				

	Rs.	a.	p.	
Value of the year's transactions	9,97,954	11	2	
Cost of the year's transactions	5,48,502	0	10	
Balance ...	**4,49,452**	**10**	**4**	
Deduct difference between the value of timber stock at the commencement and close of the year	14,307	1	11	
Balance ...	**4,35,145**	**8**	**5**	
Add, value of live and dead stock	96,905	8	2	
Net Results of the Year ...	**5,32,051**	**0**	**7**	Profit.

NAINI TAL:
The 14*th August*, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests. N.-W. P.

APPENDIX XIV.

FOREST DEPARTMENT, N.-W. P.

I.—*Statement showing Area of Reserved Forests.*

Reserved Forests.		Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Kumaun Division ...		700·	...	...	700·
Garhwál „ ...		...	600·	...	600·
Dehra Dún „ ...		485·144	75·146	...	560·290
Jaunsár „ ...		24·55	...	...	24·55
Bhágirathi „ ...		...	...	...	...
Gorakhpur „ ...		...	125·166	...	125·166
Jhánsi Division...	Jhánsi Forest...	...	33·	...	33·
	Lalitpur „ ...	...	145 42	...	145·42
Rohilkhand ditto	Bareilly „ ...	...	137·314	...	137·314
	Bijnor „ ...	...	95·16	...	95·16
	Total ...	**1,209·694**	**1,211·206**	...	2,420·90

APPENDIX XV.

FOREST DEPARTMENT, N.-W. P.

II.—*Statement showing Area of Unreserved Forests.*

Unreserved Forests.		Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Kumaun Division		...	...	...	...
Garhwál „		600·	...	600·	...
Dehra Dún „		...	...	...	...
Jaunsár „		119·62	...	...	119·62
Bhágirathi „		...	...	...	...
Gorakhpur „		125·166	...	125·166	...
Jhánsi Division...	Jhánsi Forest...	33·	...	33·	...
	Lalitpur „ ...	246·96	...	246·96	...
Rohilkhand do. ...	Bareilly „ ...	137·314	...	137·314	...
	Bijnor „ ...	86·08	...	86·08	...
	Total ...	**1,348·140**	...	**1,228 520**	**119·62**

NAINI TAL :
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX XVa.

II. (a.)—AREA OF UNRESERVED FORESTS UNDER COMMISSIONERS OF DIVISIONS.

Statement of waste lands and forests in the several Commissionerships of the North-Western Provinces, which have not been demarcated, which may be sold or otherwise alienated, and which may therefore fitly be classed as unreserved Forests, vide paragraph 2 of Government of India letter to the Secretary to Government, North-Western Provinces, Public Works Department, No. 236, dated the 14th March, 1876.

Commissionership.	Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.	Remarks.
	Square miles.	Square miles.	Square miles.	Square miles.	
Meerut	*Nil.*	30·63	...	30·63	These forests are situated in the Dehra Dún district.
Rohilkhand	...	...	...	...	The Commissioners of these divisions report that they have no unreserved forests in their charge.
Agra	...	...	...	...	
Allahabad	...	...	...	...	
Benares	...	162 3	...	162·3	123·24 square miles in the Dúdhi tappas in the Mirzapur district, and 39·06 square miles, (roughly estimated and subject to correction hereafter) in the Gorakhpur district.
Jhánsi	...	2·8	...	2·8	The area of 75 babul patches in pargana Moth in the Jhánsi district.
Kumaun	...	2,400·	...	2,400·	This area has been very roughly estimated by Sir Henry Ramsay, the Commissioner of Kumaun, and the figures are of course open to correction hereafter should it be found necessary to make a more careful estimate.
Total ...	...	2,595·73	...	2,595 73	

NAINI TAL :
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. Provinces.

APPENDIX XVI.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES.

III.—Statement showing Area of Plantations.

Plantations.		Area in 1874-75.	Total cost.	Area added during 1875-76.	Amount expended during 1875-76.	Total area up to 1875-76.	Total expenditure incurred up to 1875-76.
		A. r. p.	Rs. a. p.	A. r. p.	Rs. a. p.	A. r. p.	Rs. a. p.
Kumaun Division	... ...	298 2 9	7,197 1 3	69 0 0	1,554 5 6	367 2 9	8,751 6 9
Garhwál "	... ...	...	...	47 0 0	401 3 0	47 0 0	401 3 0
Dehra Dún "	... ...	17 0 0	636 1 10	...	...	17 0 0	636 1 10
Jaunsár "	... ...	613 0 29	8,878 14 0	386 2 0	2,737 8 10	*996 2 29	11,616 6 10
Bhágirathi "	... ...	...	...	...	...	...	...
Gorakhpur "	... ...	25 0 0	1,923 5 2	100 0 0	1,680 5 5	125 0 0	3,603 10 7
Jhánsi Division ...	Jhánsi Forests	181 0 0	50 0 0	...	...	181 0 0	50 0 0
	Lalitpur "	...	...	...	...	...	...
Rohilkhand Division ...	Bareilly "	...	...	...	...	...	...
	Bijnor "	...	...	...	...	...	...
	Total ...	1,134 2 38	18,685 6 3	602 2 0	6,373 6 9	1,734 0 38	25,058 13 0

NAINI TAL:
The 14th August, 1876.

* Three acres abandoned during the year.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX—XVII.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES.

IV.—Area of forest tracts protected from fire up to commencement of the rains of 1876.

Forest tracts protected from fire.	Area in 1874-75.	Total cost.	Additional area protected in 1875-76.	Amount expended in 1875-76.	Total area protected up to 1875-76.	Total expenditure incurred up to 1875-76.	REMARKS.
	Acres.	Rs. a. p.	Acres.	Rs. a.	Acres.	Rs. a. p.	
Kumaun Division	19,899	2,779 7 0	36,481	3,349 3 8	56,380	6,128 10 8	*(a)* Three thousand and two hundred acres of this area were burnt between 1st April, 1875, and the commencement of the rains of 1875, but this total area of 7,685 acres, less 1,370 acres burnt during the year, was protected up to commencement of the rains of 1876.
Garhwál „	10,000	2,271 13 11	162	3,000 0 0	10,162	5,271 13 11	
Dehra Dún „	*(a)* 7,685	3,269 0 7	...	448 4 3	6,315	3,717 4 10	
Jaunsár „	*(b)*57,756	355 10 5	*(c)* ...	397 5 0	57,756	752 15 5	*(b)* Three acres burnt after close of 1874-75 and before the rains of 1875, but these have been protected during 1875-76.
Bhágirathi „	...	...	...	...	...	...	*(c)* One thousand acres additional protected to 31st March, 1876, but which afterwards and before the rains were burnt.
Gorakhpur „	70	30 0 0	37,508	215 5 9	*(d)*37,508	245 5 9	*(d)* This excludes the 70 acres in column 2 which were burnt between 31st March and commencement of rains of 1875.
Jhánsi Division — Jhansi Forests	801	80 0 0	25	125 0 0	826	205 0 0	
Jhánsi Division — Lalitpur „ ...	...	...	1,749	124 0 0	1,749	124 0 0	*(e)* These Bijnor figures represent the total area protected and the total amount expended up to 1875-76 inclusive.
Rohilkhand Division — Bareilly „ ...	...	...	...	...	...	...	
Rohilkhand Division — Bijnor „ ...	...	...	*(e)* 15,719	3,852 10 6	15,719	3,852 10 6	
Total ...	96,211	8,785 15 11	91,644	11,511 13 2	1,86,415	20,297 13 1	

NAINI TAL:
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

APPENDIX XVIII.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES.

V.—Statement showing Prosecutions for breaches of Forest Rules.

Divisions.		*Number of persons prosecuted.*		*Convictions obtained or still pending.*	
		Number of cases.	Number of persons.	Number of cases.	Number of persons.
Kumaun Division		159	565	143	539
Garhwál "		16	25	16.	25
Dehra Dún "		8	32	8	31
Jaunsár "		14	30	14	30
Bhágirathi "		1	3	1	3
Gorakhpur "		6	14	6	14
Jhánsi Division ...	Jhánsi Forests	7	9	7	8
	Lalitpur " ...	8	18	7	15
Rohilkhand ditto...	Bareilly " ...	...	...	...	...
	Bijnor " ...	3	6	3	6
Total ...		222	702	205	671

NAINI TAL :
The 14th August, 1876.

I. E. O'CALLAGHAN,
Offg. Conservator of Forests, N.-W. P.

No. 188F.-C.

GOVT., N.-W. PROVINCES,

PUBLIC WORKS DEPARTMENT.

FOREST.

DATED NAINI TAL, THE 13TH OCTOBER, 1876.

ANNUAL REPORT OF THE FOREST DEPARTMENT, N.-W. P., FOR 1875-76.

READ AGAIN—

Forest Report for 1874 75
Budget Estimate of Forest Department, North-Western Provinces, for 1875-76.

READ—

Memorandum No. 117, dated 14th August, 1876, from the Officiating Conservator of Forests, North-Western Provinces, submitting Forest Report for 1875-76.

RESOLUTION.—The Annual Report gives the following General Financial results :—

	Rs.
Receipts	9,69,698
Expenditure	5,37,914
Surplus to credit of Imperial Revenue	4,31,784

The net results are thus obtained—

Realizations	9,69,698
Deduct—	
Realized on account of transactions of previous years ...	31,459
Balance, ...	9,38,239
Add—	
Outstandings on account of the year minus bad debts ...	59,716
Value of the year's transactions	9,97,955
Disbursements	5,37,914
Deduct—	
Disbursed on account of transactions of former periods ...	28,448
Balance ...	5,09,466
Add—	
Due for transactions during the year under review ...	39,036
Real cost of the year's transactions	5,48,502

Hence we have—

Value of the year's transactions	9,97,955
Cost	5,48,502
Net result of the year's transactions	4,49,453

Add—

Difference between value of stock at commencement and close of the year, computed as follows :—

Value of live and dead stock at close of year never before brought on to annual accounts,...	Rs. 96,905	
Deduct—		
Difference in value of timber	14,307	Rs. 82,598
Real net results of the transaction during the year ...		5,32,051

2. Comparing the actuals of 1875-76 with the regular estimate, we have—

	Regular estimate, 1875-76.	Actuals, 1875-76.	Difference More.	Difference Less.
	Rs.	Rs.	Rs.	Rs.
Receipts	9,34,000	9,69,698	31,698	...
Expenditure	5,40,000	5,37,914	...	2,086
	3,98,000	4,31,784	31,698	...
			2,086	Add
Actuals more than was anticipated in regular estimate,	...	...	33,784	

Or the actuals exceed the regular estimate by Rs. 33,784, a sum made up by an increase in receipts of Rs. 31,698, and a diminution in expenditure of Rs. 2,086.

3. The following table compares the actuals of the year under review with those of two previous years :—

	Actuals, 1873-74.	Actuals. 1874 75.	Actuals, 1875-76.
	Rs.	Rs.	Rs.
Receipts	16,29,496	10,85,947	9,69,698
Expenditure	9,66,506	8,55,876	5,37,914
Surplus ...	6,62,690	2,30,071	4,31,784

From the last column of the table it will be seen that the surplus has reached the high percentage of 80·2 on the expenditure incurred.

4. The actuals of 1875-76, when compared with the Budget-estimate, give the following results :—

	Budget-estimate, 1875-76. *	Actuals, 1875-76	Difference. More.	Difference. Less.
	Rs.	Rs.	Rs.	Rs
Receipts	8,66,000	9,69,698	1,03,698	...
Expenditure	5,51,000	5,37,914	...	13,086
Surplus ...	3,15,000	4,31,784	1,03,698	13,866 Add
		Net ...	1,16,784	...

Or the actuals show a surplus greater by Rs. 1,16,784 than was anticipated.

Revenue.

5. In the following table will be found the revenue realized in the several Divisions, as compared with that set down in the regular estimate :—

	Regular estimate, 1875-76.	Actuals, 1875-76.	Difference. More.	Difference. Less.
	Rs.	Rs	Rs.	Rs.
Direction Division	10	*Nil.*	...	10
Kumaun „	2,75,500	2,76,517	1,017	...
Naini Tal Sub-division	1,709	5,124	3,415	...
Ránikhet „	8,750	15,693	6,943	...
Garhwal Division	1,66,000	2,00,947	34,947	...
Dehra Dún „	88,000	67,521	...	20,479
Jaunsár „	2,23,649	2,22,247	...	1,402
Bhagirathi „	1,01,075	1,00,480	...	595
Gorakhpur „	41,700	49,378	7,678	...
Jhánsi „	6,310	6,617	307	...
Rohilkhand „	25,297	25,174	...	123
Total ...	9,38,000	9,69,698	54,307 22,609	22,609 Deduct.
More than in regular estimate ...			31,698	...

The increase in the receipts of the Garhwál Division is due to the auction sales of old stock which had been held back for better prices, and of kokat timber. The decrease in the Dehra Dún is due to a fall in the receipts under revenue from wood brought to depôt by Departmental Agency. The reason for this is not satisfactorily explained in the report.

* As fixed by G. O. No. 416 of the Government of India, Department of Revenue, Agriculture, and Commerce, dated Simla, the 20th April, 1875.

6. Comparing the revenue of 1875-76 with that of 1874-75, in the several Divisions, the following result is obtained:—

Divisions.	Revenue, 1874-75.	Revenue, 1875-76.	*Difference.* More.	*Difference.* Less.
	Rs.	Rs.	Rs.	Rs.
Direction Division	2	*Nil.*	...	2
Kumaun „	2,75,372	2,76,517	145	...
Naini Tal Sub-division	...	5,124	5,124	...
Ránikhet „	...	15,693	15,693	...
Garhwál Division	1,16,948	2,00,947	83,999	...
Dehra Dún „	81,805	67,521	...	14,284
Jaunsár „	2,63,017	2,22,247	...	39,770
Bhágirathi „	2,84,376	1,00,480	...	1,83,896
Gorakhpur „	39,299	49,378	10,079	
Jhánsi „	18,501	6,617	...	0,884
Rohilkhand „	6,627	25,174	18,547	...
Total ...	10,85,947	9,69,698	1,33,587	2,49,836
Deduct ...	...	...	...	1,33,587
Decrease in 1875-76 ...				1,16,249

It is observed that the revenue of the Kumaun Division for 1874-75 includes that of the Naini Tal and of the Ránikhet Sub-Divisions; while for 1875-76 the revenue for each Sub-Division is separately shown.

7. The increase in the revenue of the Naini Tal Sub-Division, from Rs. 1,728 to Rs. 5,124, is due to the exertions of Mr. Braidwood, the Assistant Conservator in charge.

8. In Garhwál the increase in revenue is due mainly to an increased sale of sál karris.

9. The fall in the revenue of the Jaunsár Division is due almost entirely to a smaller supply of deodar sleepers: the revenue from this item has fallen from Rs. 1,82,956 to Rs. 1,50,472.

10. The revenue of the Bhágirathi Division has fallen from the same cause.

11 The total revenue for the year under review is less than that of the previous one by Rs. 1,16,249.

EXPENDITURE.

12. The following table compares the actual expenditure for 1875-76 with the actuals for 1874-75, and with the regular estimate for 1875-76 :—

Division.	Actual expenditure A. and B., 1874-75.	Regular estimate A. and B. of 1875-76, sanctioned by the Government of India.	Actual expenditure A. and B., 1875-76.	Difference.			
				Less than 1874-75.	More than 1874-75.	Less than regular estimate.	More than regular estimate.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction ...	28,577	33,301	29,114	...	537	4,187	
Kumaun ...	83,030	1,09,484	1,07,432	...	24,402	2,052	
Garhwál ...	61,191	86,787	85,194	...	24,000	1,593	
Dehra Dún ...	47,955	25,603	25,471	22,484	...	132	
Jaunsár ...	1,92,911	1,59,091	1,67,516	25,395	...	...	8,425
Bhágirathi ...	3,94,386	85,671	84,599	3,09,787	...	1,072	
Gorakhpur ...	35,425	27 241	26,835	8,590	...	406	
Rohilkhand ...	8,282	4,450	4,366	3,916	...	84	
Jhánsi ...	4,119	8,372	7,387	...	3,268	985	
	8,55,876	5,40,000	5,37,914	3,70,172	52,210	10,511	8,425
				52,210	Deduct	8,425	Deduct
				3,17,962	Less than actuals, 1874-75.	2,086	Less than regular estimate.

Hence the actual expenditure is less than was anticipated in the regular estimate by Rs. 2,086.

13. The Jaunsár Division, it is noticed, is the only one in which the expenditure has exceeded the regular estimate. A reference to the previous table of receipts under revenue shows that those for Jaunsár were less by Rs. 1,402 than was calculated on when the regular estimate was framed.

14. It is satisfactory to observe that a reduction of over Rs. 4,000 on the regular estimate has been effected under the head "Direction."

Outstandings.

15. The outstandings for the year exceed those for 1874-75 by Rs. 21,302, as will be seen from the following table : —

Divisions.	Outstandings, 1874-75.			Outstandings, 1875-76		
	Rs	a.	p	Rs	a.	p.
Kumaun	6 389	8	3	33 555	5	1
Garhwál	4,534	9	9	7,226	4	2
Dehra Dún	4,483	5	6	4 161	7	11
Jaunsár	15,520	9	0	1[illegible],921	5	9
Bhágiratha	1,814	4	2	2,016	6	0
Gorakhpur	8,888	5	4	3,072	12	3
Rohilkhand	...			11	0	0
Jhánsi	93	3	0	61	7	3
	41,753	13	0	63,056	0	5
	Deduct ...			41,753	13	0
				21,302	3	5

The noticeable increase occurs in the Kumaun Division, and on this point it is observed that while the outstandings are tabulated, at page 29 of the report, as Rs. 33,555-5-1, they are shown at page 19 as Rs. 35,800-5-1. The Conservator, however, reports that of this sum Rs. 31,584 were recovered in April, 1876, thus reducing the outstandings practically, to about Rs. 2,000.

Sleeper Operations.

16. During the year, 118,071 sleepers were sold; of these, 113,503 were supplied to the Rajputana State Railway; 3,666 to the Háthras and Muttra Provincial (Light) Railway; and 902 rejected ones were sold at a reduced rate. The value realized of these sleepers amounts to Rs. 2,36,381.

Timber in Stock.

17. .The total value of timber in stock on the 31st March, 1876, amounted to Rs. 3,77,521, as compared with Rs. 3,91,828, in the previous year. It is satisfactory to observe that, in accordance with the orders issued by Sir John Strachey, the stock of timber on hand is being steadily reduced, but it should be a question for the consideration of the Conservator whether it would not be possible to still further reduce the large stocks kept on hand at the timber depôts in Kumaun and Garhwál, which are valued, it is noted, as Rs. 1,10,592, and Rs. 1,99,048, respectively. It is worthy of consideration whether stocks of timber, if stocks are kept at all, might not be arranged at more accessible places. Naini Tal, for instance, where there would always be a demand for seasoned wood for roofs and floors.

Timber Sales.

18 During the year, 488,976 logs and pieces were sold, the total amount realized being Rs. 5,25,307, as against 425,129 logs sold in the previous year for Rs. 6,39,024.

19. The following table shows the amounts realized in each Division compared with those of the previous year :—

Division.	1874-75.		1875-76.		Difference.	
	Number of logs sold.	Amount realized and due on account of sold timber.	Number of logs sold.	Amount realized and due on account of sold timber.	More.	Less.
		Rs a p.		Rs. a. p.	Rs. a. p.	Rs. a p.
Kumaun ...	27,467	94,243 0 8	39,020	1,14,137 0 7	19,893 15 11	
Garhwál ...	19,525	21,080 4 4	79,679	93,514 12 11	72,434 8 7	
Dehra Dún ...	39,715	24,269 0 3	67,307	9,667 13 11	...	14 601 2 4
Jaunsár ...	115,646	2,23,009 12 10	106,284	1,99,968 1 3	...	23,041 11 7
Bhágirathi ...	128,680	2,65,171 0 0	43,632	89,006 0 2	...	1,76,164 15 10
Gorakhpur ...	5,864	10,080 5 11	17,571	17,231 11 3	7,151 5 4	
Jhánsi ...	84,898	318 5 2	132,440	805 13 2	487 8 0	
Rohilkhand ...	3,834	852 13 0	3,043	976 7 0	123 10 0	
	425,129	6,39,024 10 2	488,976	5,25,307 12 3	1,00,090 15 10	2,13,807 13 9
					Deduct ...	1,00,090 15 10
					Less ...	1,13,716 13 11

The falling off in the Bhágirathi Division is due to a reduced supply of sleepers to the Railway Departments.

Reserved and Unreserved Forests.

20. During the year, 1,211·206 square miles have been added to the reserved forests of this province, making a total at the close of the year of 2,420·9 square miles.

21. The area of unreserved forests has been reduced from 1,348·140 to 119·62 square miles. The statement made in para. 8 of the Conservator's Report to the effect that there are no unreserved forests in Jaunsár is not understood, as in Appendix XV. Jaunsár is shown as the only Division in which unreserved forests exist.

22. The 22,844 acres of forest in the Jhánsi Division at present unreserved will shortly be notified as reserved, and will be put under forest rules.

Conservancy, Jungle Fires, &c.

23. The work of protecting the forests from fires has progressed satisfactorily and successfully. In the Dehra Dún Division, however, four destructive fires are reported to have occurred in April, 1875. The Conservator reports further a conflagration which broke out in February, 1876, and which swept through some 1,280 acres of forest land. This fire is attributed by the forest subordinates generally to the men of the Gurkha Regiment. The question of the conditions under which the Gurkhas are to be allowed to shoot in the Dún forests, however, has formed a subject for special reference to the Government of India.

Plantations.

24. Planting has been extensively carried on in the Naini Tal and Ránikhet Sub-Divisions, and in the Jaunsár and Gorakhpur Divisions.

The attention of the Government of India will be drawn to the report made by Mr. Craw on the planting of chestnut seeds sent out from home, as also to the suggestion contained in the 6th para. of his report. The nursery, it is observed, is well stocked, both with forest and fruit trees. Mr Craw has stated, in fact, personally that there is an overstock. It is not desirable to keep trees in the nursery when the Government desire both the station and the country to be stocked. The Lieutenant-Governor is quite willing that the trees should be given away *gratis* provided some measures are taken to see that they are planted out and cared for. While the stock remains so large, the Forest Department might meet any indents for fruit trees, signed by the Commanding Officer of Ránikhet, gratis, and a few villages or tea planters' gardens might be selected in different parts of Kumaun where young trees might be planted or grafts made, and Mr. Craw, or one of his mális, might be sent outnow and then to inspect them. The Conservator will consult the Commissioner and Commanding Officer at Ránikhet and report the measures adopted, in accordance with the wishes of Government, as above expressed.

Boundaries.

25. In the Naini Tal Sub Division, the boundaries have all been demarcated. In Kumaun, the northern boundary has been marked by masonry pillars, as has also the northern boundary of the Garhwál forest.

26. In Jaunsár, the boundaries of the reserved forests have been marked with pillars.

27. The officer in charge of the Gorakhpur Division, it is observed, has failed to report whether the forest boundaries have been marked with pillars, although he reports that last year's disputes have been settled. It is only by finally marking the boundaries of forests that a revival of these disputes can be guarded against.

28. The Lieutenant-Governor is glad to observe that considerable progress has been made with the important work of demarcating forest boundaries in these provinces.

Roads, Bridges, and Buildings.

29 With the exception of the construction of 7½ miles of the Nindhan valley cart road, works under this head have been restricted to repair and maintenance, and call for no special remarks.

Prosecutions for breach of Forest Rules.

30. During the year, there have been 222 prosecutions for breach of forest rules, involving 702 persons : in 205 cases convictions have been obtained, or the cases are still pending. It would be satisfactory to learn the number of cases in which convictions had actually been obtained.

General Remarks.

31. The general results of the year's working are satisfactory. All the Divisions have worked at a profit, and while the total receipts are in excess of those estimated, the expenditure has proved less than was expected by about Rs. 2,000.

32. The Lieutenant-Governor will be glad to see the registers of reserves completed as soon as practicable, but at the same time he fully concurs in the remarks made by the Conservator in the concluding portion of his 58th para., and trusts that, with the aid of maps furnished by the Forest Survey Department, the Conservator will be able ultimately to supply this Government with a thoroughly reliable statement of the area of forests entrusted to his care.

33. The proposal made by Captain Campbell to continue the Moradabad timber depôt for one year on further trial, is approved.

34. The attention of the Government of India will be requested to Mr. Greig's note on the two systems of working timber brought to depôt.

35. The Lieutenant-Governor notices with satisfaction the high terms in which the Conservator speaks of the services of Mr. Braidwood, Assistant Conservator, and Mr. Jeffries, his Head Assistant.

36. In conclusion, Sir George Couper congratulates the Conservator on the satisfactory working of his department.

No. 189F.-C.

ORDERED, that the foregoing, with copy of Conservator's Report, be forwarded to the Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce, for information of His Excellency the Viceroy and Governor-General in Council.

Nos. 190-94F.-C.

ORDERED also, that copies be forwarded to the Commissioners marginally noted. The attention of the Commissioner of Kumaun is specially invited to para. 24.

Meerut, Kumaun, Rohilkhand, Benares, and Jhánsi.

No. 195F.-C.

ORDERED also, that copy be sent to the Officer Commanding at Ránikhet, with special reference to para. 21, and with the remark that the Forest Officer at Ránikhet has been ordered to meet any indents made by him for fruit trees gratis to the extent the stock admits of.

No. 196F.-C.

ORDERED finally, that a copy be forwarded to the Conservator of Forests, North-Western Provinces, and with the request that he will issue orders to the officer in charge of Ránikhet Sub-Division, in accordance with those expressed in 195F.-C.

ALEX. FRASER, COL., R.E.,
Secretary.

No. 543.

FROM

G. H. M. BATTEN, ESQ.,

Offg. Secretary to the Government of India,

To

THE SECRETARY TO THE GOVERNMENT OF THE NORTH-WESTERN PROVINCES.

Department of Revenue, Agriculture and Commerce.

Forests.

SIMLA, *the* 11*th May* 1877.

SIR,

I AM directed to acknowledge the receipt of your letter No. 189F.-C., dated 13th October 1876, forwarding the annual progress report of Forest Administration in the North-Western Provinces for 1875-76.

2. The area of reserved forests is now stated to be approximately 2,421 square miles instead of 1,210 square miles as recorded in the report for 1874-75. The difference is explained in paragraphs 3 to 10 of the report.

3. In Appendix XV., 119 square miles are entered as unreserved forests in the Jaunsar Division. If the figures of those statements are correctly understood, this are aconsists of the second class reserves, and should, as explained in paragraph 2 of the review on the annual report of 1874-75, be added to the 2,421 square miles above mentioned, thus raising the aggregate area of reserves to 2,540 square miles. I am directed to enquire whether this view of the case is correct. It is noticed that the northern boundary of the Kumaun and Garhwal Bhabar Divisions has now been finally marked on the ground. From what is said in paragraphs 4 and 6, it is however inferred that the southern or outer boundary of these extensive reserves has not yet been settled, and a special report is requested showing the state of this question.

4. Regarding the forests leased from the Raja of Tehree in Native Garhwal, the Conservator states that a register of reserves would be unsuitable. I am directed to say that it does not at all follow that because these forests are leased a selection should not be made, and the more valuable forests demarcated with the view of protecting them more efficiently, and gradually improving their condition. In Native Garhwal, as elsewhere, the agricultural population in the vicinity of the forests doubtless graze their cattle in them and draw supplies of wood and other forest produce from them, and the unrestricted continuance of such practices would undoubtedly interfere with the protection and improvement of these forests. It is obviously out of the question that restrictions in this respect could be enforced over the whole area of the leased forests, but it may be possible, without real inconvenience to the people, to close certain limited areas and to protect and improve them in an efficient manner. The first step in this direction is to demarcate selected forests, and it appears to the Governor General in Council that the expediency of this measure should be considered. Hitherto it would appear that, excepting the laudable attempt to exclude fires from the Lambataj, Deota and Datmir forests, the chief work accomplished by the Forest Department in the leased forests of Native Garhwal has been the extraction of timber; but it seems to the Governor General in Council that the British Government, by taking a lease, has undertaken some responsibility with regard to the maintenance of

the productive powers of these forests, and that the question of demarcating the more valuable portions should be considered by His Honour the Lieutenant-Governor, of the North-Western Provinces. The Conservator, it is observed from paragraph 25 of his report, entertains a different opinion, and thinks that it would not be prudent to commence plantations or other improvements until a clear understanding has been arrived at concerning the renewal of the lease. To this view of the case, however, the Governor General in Council is not disposed to assent. As a matter of fact, Government has already, by the construction of the Bhagirathi valley road at a cost, as the Conservator states, of three lakhs of rupees, and by the building of roads and bridges in the Tonse valley, invested a considerable capital in these forests. This outlay was necessary, in order to export timber from them, but it would to a great extent be wasted if they were not maintained as permanent sources for the supply of timber.

5. In connection with this subject, I am directed to communicate for His Honour's information, a copy of the lease and rules attached thereto, under which the forests of the Chamba State in the Punjab are held by Government, and to state that the services of Mr. Pengelly, who was lately transferred from the North-Western Provinces, have been specially asked for in order to effect the demarcation of the leased Chamba Forests. After Mr. Pengelly has completed this work, it is intended that he shall be re-transferred to the North-Western Provinces, and the experience which he will have gained in the Punjab, may then, perhaps, be utilised in this respect.

6. It has also been noticed that, at the close of paragraph 7 of the report, the Conservator states that no survey has yet determined the area or boundaries of that portion of the Tehree Raja's leased forests which are attached to the Dehra Dún Division. A special report regarding these, as well as regarding the other leased forests of Native Garhwal, should be submitted.

7. From paragraph 10 it is inferred that the demarcation of the Gorakhpur forests has not yet been completed. The cause of the delay should be explained. It is hoped that the Conservator will soon be able to report the completion of this work.

8. A separate statement exhibits the unreserved forests under civil officers aggregating 2,596 square miles. It is not, however, understood under what circumstances the Lalitpur forests were diminished by 101 square miles. In the returns of 1874-75, the area of unreserved forests in that district was entered as 246·9 square miles, and in the present report 145·48 square miles are returned under reserves, and only 2·8 square miles under unreserved forests. This discrepancy should be explained, and it should be stated whether the 98 square miles which constitute the difference have ceased to be Government property, and why they were not entered as unreserved forests.

9. The account given in paragraphs 19 to 26 of the work done for the improvement of the forests has been read with interest; the work detailed is second in importance only to the demarcation of the forests, and the Governor General in Council is glad to observe that these paragraphs of the report give evidence of progress in several respects.

The data given in Appendix XVII regarding the areas protected from fire relate to the entire hot season of 1876, and have been carried on to the commencement of the rains of that year. This is in accordance with paragraph 4 of the orders on the Report for 1874-75.

10. The figures given in Appendix XVII are not readily understood, but from the notes given in the 'Remark' column it appears that out of a total area attempted to be protected up to 31st March 1875, of 96,211 acres, 3,273 acres were burnt after the close of that year, but before the commencement of the rains, so that 92,938 acres were actually saved. An additional area of 93,477 acres was protected up to the commencement of the rains in 1876, so that the aggregate area successfully protected during the hot season of 1876 has amounted to 186,415 acres. The figures of the Garhwal Division do not however seem to correspond with the data given in paragraph 22 of the report. The statement gives the area protected until the rains of 1876 as 10,162 acres, but of this area it would seem that

more than one-half, or 5,874 acres, were burnt. This apparent discrepancy should be explained. The adoption of Form No. 47 suggested in the Forest Department Code will, it is hoped, enable the Conservator in future reports to place the results of this important work more clearly before Government.

11. In Jaunsar the area protected has remained the same, the attempt to protect an additional area of 1,000 acres in the Kunigad Chir forest having failed, as explained in paragraph 24. In the Dehra Dún Division, 4,485 acres had been protected during the hot season of 1875, and this year a larger proportion of the original area attempted (7,685 acres) was saved, but not without considerable failures, one fire which devastated 1,280 acres being ascribed to the men of the Goorkha Regiment stationed at Dehra. The rules under which the men of the Goorkha Regiment shall be permitted to shoot and fish in the Dehra Dún forests have lately been agreed upon between the Conservator and the Officer Commanding, and will, it is hoped, be found to work satisfactorily.

In several of the other divisions considerable additions were made to the protected area, the largest being in Kumaun, where 36,481 acres were added, so that now these operations have been successfully extended over a large and valuable block between the Ramgunga and Kosi rivers.

12. The Governor General in Council is pleased to express his approval of this success, as recorded in the report. With regard to fire protection, the Conservator should persevere in his efforts, and should not lose sight of the important fact that fire protection, in order to be really useful, must be continuous and uninterrupted on the same areas.

13. The improvement reported in the management of the Naini Tal forests, and the detailed account of the work done in nurseries and plantations at Ranikhet, give satisfactory evidence of progress. The planting work in the Jaunsar Division also seems to have been successful, and the Conservator's proposal to concentrate plantation work in future in a few localities, is in accordance with the views expressed in paragraph 6 of the orders on the report for 1874-75. According to Appendix XVI of the report, the area stocked has increased from 1,134 to 1,734 acres, of which nearly 1,000 acres are in the Jaunsar Division. The Governor General in Council trusts that none but areas fairly stocked are included in this return. The total outlay during the year on plantations is stated to have been Rs. 6,373, while the amount entered under AIV2 only amounts to Rs. 2,196. Perhaps a quota of establishment and other charges were included in Appendix XVI, but the apparent discrepancy should be explained.

The Governor General in Council is glad to observe that the Conservator has framed the plan of operations for the Deoban forests in accordance with the suggestions submitted to Government by the Inspector-General of Forests.

14. Good work seems to have been done in extending the system of roads and paths in the Jaunsar Division, in making inspection paths in the Naini Tal forests, and in opening up by a road the forests of the Nindhor valley. But what is recorded in paragraph 25 of the report, regarding the maintenance of the road up the Bhagirathi valley, is not satisfactory. As stated by the Conservator, Government has spent three lakhs of rupees upon this road, and it is obviously necessary that efficient arrangements should be made to ensure its being kept in good repair. A special report is requested upon this subject.

15. The yield of the forests is explained in paragraphs 27 to 34 of the report, and some further details regarding the quantity of the different descriptions of produce removed are recorded in paragraphs 39 to 49.

In paragraph 7 of the orders on last year's report, the Government of India pointed out that the working of the forests under both systems,—the departmental system and the system of removal of the produce by purchasers from the forests,—must be regulated by a plan of operations, which provides for the maintenance and improvement of the productive powers of the forests, and it was said that it should be explained in what manner the yield of the forests under these two systems is regulated.

16. In reply, a memorandum by the Conservator of the 14th March 1876 is submitted. As regards timber and wood removed by purchasers, Mr. Greig states that it is regulated by nature, and that dead wood only is allowed to be removed, except in special cases, such as for instance the clearing of land for cultivation in Kumaun and Garhwal, and the clearing of fire lines.

As regards timber brought to depôts on Government account, the Conservator states that the amount felled annually is determined principally by the annual demand. Mr. Greig adds that he feels fairly confident that all Forest Divisions under his control are being worked well within their capabilities, that he can safely cut from one to one and a half lacs of Sâl and Sein timber, and that the Deodar forests in his charge are capable of supplying all that is likely to be required from them.

It is not understood whether the Conservator means one to one and a half lacs of cubic feet of Sâl and Sein timber, or whether those figures represent the value of the timber in rupees; but whatever the meaning may be, it appears to His Excellency in Council that these are mere assertions and expressions of Mr. Greig's personal opinion. They are not apparently based upon any data regarding the quantity of mature timber available and the rate of increase of the growing stock.

17. The Governor General in Council readily admits the difficulties which mixed forests on difficult hilly ground present, but endeavours must be made to overcome these difficulties, and gradually to place the working of these forests upon a safe footing. In the memorandum quoted, the Conservator seems to imply that no valuation surveys likely to yield a reliable estimate of the growing stock of Sâl timber in the Government forests are practicable. If this is really the case, then the first step in this direction must be to collect all data regarding the actual yield of these forests since they have been under regular management. Statements exhibiting the quantities of Sâl and Deodar timber cut and exported on Government account during the last 6 or 7 years should be prepared, and these statements should be accompanied by a brief account of the principal ranges, blocks or forest tracts which have furnished Sâl and Deodar timber during that period.

18. These returns should, as far as possible, besides giving annual totals for each division, exhibit the range or block in which each year's cuttings were made, and should give an approximate statement of the number of trees felled in each such range or block. It should also be stated which of these ranges or blocks were, after cutting, protected from fire and grazing which in the memorandum adverted to is said to be the general rule, whether such protection has been continued, and with what result as regards reproduction.

It should also be explained under what circumstances timber has been cut on land cleared for cultivation in the forests of the Kumaun and Garhwal Divisions, as stated in Mr. Greig's memorandum.

19. When these statements have been prepared, the Conservator should reconsider the question of valuation surveys. Wherever the forest survey has furnished him with detailed maps of any forest range containing mature timber, he should consider, in consultation with Captain Bailey, what measures should be taken to ascertain approximately the quantity of growing timber of the different classes, and to determine what should be the maximum limit of annual cuttings in that range, and how these cuttings should be distributed in the sub-divisions of the range.

20. The Conservator of Forests should distinctly understand that the Governor General in Council insists on strict observance of the orders conveyed in paragraph 7 of this Department No. 236, dated 14th March last, and in other communications, that the working of the Government forests must be regulated by a plan of operations which shall provide for the maintenance and improvement of the productive powers of the forests. It is the Conservator's duty to take the steps needful for carrying out these orders, and if he cannot do so himself with the aid of his local staff, he should consult the Superintendent of Forest Surveys, and request his advice and assistance in this matter.

21. The financial results of the year under review have been as follows :—

		Rs.
Receipts	... .	9,69,698
Charges { A	... ...	3,91,385
Charges { B	... ...	1,46,529
	Total	5,37,914
	Surplus	4,31,784

The amount realized on account of Government timber operations was Rs. 5,11,556 against an outlay under A.I. of Rs. 2,51,468. The surplus realized on this account in 1875-76 has been more favourable than in previous years. Nevertheless, it seems to the Governor General in Council worthy of consideration by His Honour the Lieutenant-Governor, with reference to the remarks made in the communication from this Department No. 40, dated the 12th January 1877, whether it will not be well to curtail these operations in some divisions, on financial grounds, as well as in order better to secure the maintenance and improvement of the forests.

22. A considerable portion of the report under review is taken up by a comparison of the actual receipts and charges with the estimates. This comparison, I am directed to state, has its place in the annual statement of actuals which is submitted separately. Annual reports are needlessly burdened by these details, which have no permanent interest.

23. Statement No. 15, giving a detailed account of the timber in hand on 31st March 1876, occupies ten pages, and should hereafter in the printed copies of the report be condensed and shortened. This need not exclude the submission of detailed manuscript statements to the Local Government and to the Accounts Department, but for the purposes for which the annual report is submitted to the Government of India, less detail will suffice, and this will diminish the bulk of these reports as well as the cost of printing them.

24. It is noticed that the balance at depôt at the close of the year, in the Kumaun and Garhwal Divisions, was very large, as compared with the quantity brought to depôt and sold during the year under review.

The following figures are taken from statements 24, 26 and 15 of the report :—

Divisions.	Brought to depôt.	Sold.		Balance at close of year.	
		Cubic feet.	Amount realised.	Cubic feet.	Estimated value.
	C. ft.		Rs.		Rs.
Kumaun	100,308	103,664	1,14,137	102,827	1,10,592
Garhwal	176,535	112,955	93,514	202,549	1,99,048

These large balances do not seem to indicate any very brisk demand for timber brought to depôt on account of Government, and I am directed to enquire whether any of this timber included in the balance in hand is not old stock, which it would be better to sell than to keep at depôt.

25. The cash balances in hand at the commencement and at the close the year are also very large. In the Garhwal Division, for instance, the figures recorded are Rs. 22,324 at the commencement and Rs. 26,703 at the close of the year. The necessity of these heavy balances should be explained.

I have the honour to be,

SIR,

Your most obedient Servant,

G. H. M. BATTEN,

Offg. Secretary to the Government of India.

1877

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE AND COMMERCE.

FORESTS.

To

THE SECY. TO THE GOVT. OF THE NORTH-WESTERN PROVINCES

No. 543.

Dated Simla, the 11*th May* 1877.

SUBJECT.

OBSERVATIONS and orders on the Progress Report of Forest Administration in the North-Western Provinces for 1875-76.

Govt. Central Branch Press, Simla —No. 160 R., A. & C.—12-5-77 —450.

REPORT ON PUNJAB FOREST ADMINISTRATION FOR 1875-76.

No. 86 C. L. of 1876-77.

FROM

B. H. BADEN-POWELL, ESQUIRE, C. S.,

Conservator of Forests, Punjab.

TO

LEPEL H. GRIFFIN, ESQUIRE, C. S.,

Secretary to Government, Punjab.

Dated Camp Simla, 9th September 1876.

SIR,

I have the honor to submit the Annual Report for 1875-76.

I have &c.,

B. H. BADEN-POWELL,

Conservator of Forests, Punjab.

REPORT ON PUNJAB FOREST ADMINISTRATION FOR 1875-76.

PART I.—INTRODUCTORY.

The report is prepared under difficulties.

Having been absent from the Punjab since the autumn of 1872, I have no personal knowledge of the work done in 1875. Most of the Divisional reports have reached me so late that serious notice will have to be taken, if next year this is not entirely remedied. The only reports that were in fair time were those of the Chenab and Plantation Divisions; and the Beas Division had (owing to the death of Captain Douglas) an exceptional reason for delay.

The greatest of the difficulties, however, consists in the date of getting the statements of Receipt and Expenditure from the Accountant General. In the 1st week in August they had not been received. I have endeavoured to discover how far this is due, if at all, to our office, but I think it is not.*

The report will be principally concerned with a comparison of the figures of 1875 with those of past years.

It is desirable from time to time to gather up the threads of former narrative reports and preserve them. They form the basis of forest statistics.

PART II.—SPECIAL.

CHAPTER I.—STATE AND LEASED (RESERVED) FORESTS.

SECTION I.—AREA AND BOUNDARIES.

SUTLEJ DIVISION.

Sutlej area unchanged.

1. The area has remained unchanged. The Working Plan prepared by Mr. Brandis and other officers contemplated the examination and survey of the forests on the right bank of the Sutlej (Pandrabis district) during the next five years.

2. The forests about the Gunugad were accordingly surveyed and examined by Mr. G. Minniken, whose services it is hoped will be available year by year till the work is accomplished.

* I have since learned that the Provincial accounts are not closed till 31st July, and in case of any delay till later, so that I cannot get the Financial Statements before that.
This being the case, submission of the complete report with the Accountant General's figures so as to be in print and with the Government of India by 1st September is an impossibility.

Central Rukh (Fuel Reserve) Division. Tabular Statement of Rukhs.

DISTRICT.	No. of Rukhs.	Area in 1874-75.	Area in 1875-76.	Increase.	Decrease.	REMARKS.
Lahore ...	75	1,98,977, should have been 2,16,912	2,13,799	...	3,113	The reduction in area, *viz.*, 2,446 acres to Plantation Division ; 667 acres to Jelaluddeen for a cattle farm.
Amritsur ...	9	2,724	2,793	69	...	69 acres alluvion in Gugrawal thrown up by Bias River.
Gujranwalla	62	2,42,606	2,42,693	87	...	This area includes the 13 Rukhs in the Jhang District included in Gujranwalla, *vide* Annual Report 1873-74. 87 acres have been thrown up by river Chenab in Bela Mohrid.
Montgomery	57	5,52,798 should be 5,52,794	5,53,264	470	...	The excess is 470 acres ; thus, 960 re-transferred from Plantation Division, 490 given up to Zemindars.
Mooltan ...	35	59,958	59,979	21	...	33 acres increased by alluvion. 12 acres decreased by erosion.
Mozuffurghur	64	1,13,953	1,10,002	...	3,951	1,690 acres were given up to the villagers in Lusegar Serai by order of the Lieut. Governor, Punjab. 2,063 in Rukh Khudai have also been restored to the Zemindars. 135 acres increase by alluvion. 333 decrease by erosion.
Dera Ghazi Khan ...	19	...	32,129	32,129	...	36,129 in 21 Rukhs were first handed over, but of this 2,000 acres in Bét Mohri were re-transferred. 2,000 acres in Kotla Shore Mohamed : were carried away by erosion.
Gurdaspur ...	...	...	...	...	...	Under consideration for transfer to the Forest Department,
Jallundur ...	1	...	250	250	...	Rukh Sarangwal was transferred by the Plantation Division.
TOTAL ...	322	11,88,947	12,14,909	647	7,064	

The above Tabular Statement shows the total area of rukh land administered by the Fuel Reserve Division for 1875-76, as 12,14,086 acres being an increase of 25,962 acres, which is accounted for in the following detailed statement :—

LAHORE.

2. I may here point out that the error noted in red ink in the above statement of 17,935 acres has existed apparently for some years.

It was discovered I understand before the submission of the last Annual Report, but the officer in charge of this Division, during my absence on leave, omitted for some reason to rectify it.

The decrease in area of acres 3,113 is made up of the following items, *viz.*, 2,446 acres remaining in Rukh Jalleki were made over to the Plantation Division, and 667 acres in Rukh Raewind Jadid were given up to the District authorities for the purpose of forming a horse and cattle breeding farm. In Rukhs Dobli and Dig, a Rajbaha has been constructed by the Canal authorities, and land to the extent of some 45 acres taken up, but not yet transferred.

The boundary pillars are in good order, the corner ones being of masonry and the intermediate ones of mud. In the latter repairs are easily carried out when required.

AMRITSAR.

3. An increase of 69 acres occurred in this District at Rukh Gagrewal by alluvion (on the Beas).

The boundary pillars may be remarked on as above. No boundary disputes occurred.

GUJRANWALLA.

4. An increase of 87 acres by alluvion on the Chenab in Rukh Bela Marid has been taken up. The Zemindars of Kanowali, Zillah Shahpur, have however disputed our right to it, and the case was under enquiry, before the Extra Assistant Commissioner, Gujranwalla, at the end of the last official year.

Boundary pillars, &c., as above.

MONTGOMERY.

5. It will be observed that there was an error of 4 acres in excess, as entered in last year's Annual Report, which is now corrected. The increase in area occurs thus : 960 acres comprising the Sakh Rani and Khanwah plantations were re-transferred by Mr. Minniken, and 490 were given up to the Deputy Commissioner under orders from Financial Commissioner, on a cultivating lease, leaving an excess of 470 acres.

Boundary pillars in this District exist, but a large portion of them require renewal. This is being done as the survey under charge of Mr. Ellis proceeds.

MULTAN.

6. There have been no transfers of area in this District, though a road has been cut by the Railway authorities through Rukh G.; the land, however, has not been officially made over; the area covered by the road is 150 acres.

In Rukh Bahadurpur, tehsil Lodhran, a boundary dispute has occurred with the Zemindars who broke down the boundary pillars. The case is now under investigation in the Court of the Settlement Officer.

The pillars are in fair order.

No final report has yet been received from Mr. Ellis regarding the survey.

The increase of 21 acres occurs as follows :—

33 acres have been thrown up by the river in Rukh G., and 12 acres have been lost by erosion.

The Rukh survey operations which had been carried on by the Settlement Officer were brought to a close—*vide* the Conservator of Forests, No. 217 M., dated 17th September 1875.

MOZUFFURGARH.

7. In this District the survey and demarcation has been carried on by the Settlement Officer with full powers of releasing land to zemindars, under orders from the Hon'ble the Lieutenant Governor, Punjab, and in accordance with the instructions received in this office, the Langar Serai Rukh containing 1,690 acres has been released—*vide* letter No. 3534, dated 3rd March 1875.

In addition to the above, Rukh Khudai containing 2,063 acres has been released under similar instructions.

The boundary pillars of the Rukhs originally transferred to this Department exist, but are in a dilapidated state, it being a waste of money to repair them, until the new demarcation is sanctioned and a final settlement of boundaries made.

The increase of 135 acres by alluvion occurs as follows :—

Rukh Dhaka	31 acres.
„ Kundrala	42 „
„ Nurwala	62 „
Total ...	135 acres.

The decrease of 333 acres by erosion is accounted for thus :—

Rukh Kotla Agur	...	...	...	...	42 acres.
„ Kundrala	...	...	...	...	125 „
„ Bet Chana	...	...	...	...	83 „
„ Nurwala	...	...	...	...	83 „
			Total	...	333 acres.

This point, however, requires no detailed remarks, as the damage done has been immaterial, and the increase by alluvion is at present a matter of small moment, as regards the value of the District Rukhs.

The Settlement Officer, Mr. E. O'Brien. reports that the re-demarcation of all the Rukhs in this District as ordered by Government has been completed, but that sanction has not yet been received to his recommendations.

I am therefore unable to make any statements regarding the changes which may have been approved of or otherwise.

The whole arrangements will however, it is hoped, be shortly officially promulgated, and a report be made by Mr. Ellis, Assistant Conservator in charge of the Sub-Division.

DERA GHAZI KHAN.

8. Since the transfer of the Rukhs in this District, 2,000 acres in Bet Mohri were released to the Zemindars by order of Government; no boundary pillars have as yet been erected, but there is a plough line drawn round Rukh or portion of a Rukh under Forest administration. It is, however, probable that strong fences will be erected, though the matter is still under consideration.

The demarcations and survey have been completed by the Settlement Officer, and area entered in Tabular Statement, para. 1, is now under our charge; it is however probable that some portion of this area will be released during the next year as being valueless for conservancy.

2,000 acres in Kotla Shere Mahomed were carried away by the river

No boundary disputes have been reported.

GURDASPUR.

9 No land has yet been transferred in this District, but the transfer is under consideration.

JALLANDUR.

10 The boundary pillars of Rukh Sarangwal are in good order; it was re-transferred to this Division as being unsuitable for a plantation

No settlement of Gurdaspur.

19. I have to regret that nothing has been done for the Gurdaspur forests. If they cannot be taken up for Government, I would advice a line of forest being drawn along the hills and the forest maintained (not given over to modified destruction) *for the benefit of the people*, the trees being counted and all trees to be felled in the next five years being marked with red paint.

Power must be reserved to enclose places where grazing should be excluded to favor reproduction.

Special survey work on blocks of reserved Rukhs.

20. During the year also Mr. Ellis has been on special survey work in the Mooltán and Montgomery Districts, and it has since been arranged to survey blocks only within ten miles of the railway and main road lines. Sample areas have been demarcated and counted. All this will form the subject of a special report when the blocks are proposed for final sanction.

Northern Rukh (Fuel Reserve) Division.

Northern Rukhs—adjustment of area required.

21. No change took place in the area, but it is clear that a new adjustment of area in the Rukhs of Jhelum and Shahpur Salt Range will be necessary to enable proper conservancy to take effect.

The Kachhi.

21 A. The question of demarcating the Kachhi Sissu forest on the Indus has at last been brought to a close. An area of 1,414 acres in 15 plots containing 11,383 Sissu trees has been secured for exclusive possession by Government, and this has, it is understood, been taken over. The services of a Forest Officer have not yet been available (in the reduced state of our establishment) to visit this forest, but it will be taken in hand at the earliest opportunity—*vide* Pro. for November 1875, No. 3.

Difference between plain Rukhs and those in the Salt Range, &c.

22. On the general subject of Rukh demarcation, it is clear that the climatic influence is very small on the plains. Although therefore the Forest area of the public hills and the Salt Range will have to be settled on principles applicable to hill ranges, all the plain Rukhs may be largely reduced in area.

Economy to be effected.

Defined blocks will be demarcated within easy distance of large towns, railway lines and main communications, and all the rest returned to the district. This will effect a very great economy in establishments, as I shall propose to keep up a *Forest* establishment on the Forest blocks only. The whole of the rest being provided for by a more revenue collecting establishment costing a fixed percentage on income.

Rawulpindi Division.

Rawalpindi—Captain Wace's area revision.

23. Proposals made by Captain Wace, though not, I understand, finally ordered, have received practical effect since April 1875.

24. The following rukh area has been given up :—

All rukhs in Pindi Gheb Tehsil	58,655 acres.
Fatteh Jung Tehsil	9,135 „
Attock Tehsil	5,945 „
Rawulpindi Tehsil	1,577 „
Total ...	75,315 acres.

25.—Those retained are the following:—

(In Round Numbers.)

		Acres.	
Attock Tehsil—	Kawagarh	4,400	Complete control.
	Kherimar	3,000	Ditto.
	Kalachitta range in this Tehsil	62,000	Partial control; being subject to grazing on the *tirni system.*
Rawul Pindi Tehsil—	Kalachitta range in this Tehsil		
	Syadpur Margulla Hills ...	20,000	Defined rights of grazing and Military Rukhs.
	Maira	14,000	Defined rights.
	Tumair	4,700	Ditto.
	Bannigala	600	Ditto.
	Khairi-Murat	17,000	Complete control.
Gujar Khan Tehsil—	Bagam	8,000	Defined rights of grazing, &c.
	Total	1,21,000	

The Hill Rukhs of Rawul Pindi—their condition.

26. The whole of the Rukhs in Murree and Kahuta Tehsils are in confusion, but I believe a Settlement has at length been ordered (they are all hill forests). The Civil authorities appear to consider that all Conservancy is objectionable; they have refused to allow prosecutions under the Penal Code, as forest offences are not in their opinion crimes. Cultivation is absolutely unchecked, also grazing and fires. A representation regarding fires has however produced at last an order to close the burnt forests.

Demarcation.

27. As regards demarcation in the plain portions of the Division, Kawagarh, Khairi-Murat and Kherimar have been completely demarcated with solid pillars. As it is hoped that on the expiry of the Settlement, the area of Syadpur, Margulla and Kalachitta will be re-adjusted, it is undesirable to demarcate them permanently at present.

The demarcation of the other Rukhs will be proceeded with.

Plantation Division. Changa Manga.

Artificial Forests—area and demarcation.

28. An additional area of 2,446 acres of Rukh Jalloki for contemplated extensions to the north of the line has been surveyed and carefully demarcated, especially where it adjoins Mahomed Sultan's grant.

Lahore Sailaba.

29. Some pillars had been carried away by floods and have been replaced.

The following areas were lost by erosion :—

	Planted.	Not planted.	Total.
Jhok and Sadhanwali ...	6 acres	30 acres	= 36
Shahderah	6 „	...	= 6
Mahmud Buti	½ „	44	= 44½

Against this we have an increment by alluvion of 50 acres at Jhok.

Protection of river bank plantations.

30. The precautionary measure of erecting spurs of fascines and stakes, has been generally successful, and silt banks are formed wherever the spurs stood.

Willow slips have been largely planted on the banks of Mahmud Buti, where the danger is from the wash rather than from the setting in of the current.

KATHALA.

31. The abandonment of the proposal for a large plantation at this place belongs rather to the narrative of 1876.

32. The so-called plantations of Sarangwal (250 acres), Ravi (1,442 acres), and Khanwah (450 acres) were returned to the Fuel Reserve Division Central as being Rukhs originally taken for experiments in planting and now being planted up as far as possible, and not being suitably situated for extension, are given back to their own Division.

The so-called "Carob plot."

33. 37 acres near Government House at Lahore were acquired for a small plantation for the benefit of the station, the land is bad and unsuitable for the Carob tree for which it is designed. It will however be planted up, and *some* Carob trees may be expected to survive in the best portions. It seems to have been forgotten that arid soils differ in quality as much as moist ones ; and though generally it is true that the *Ceratonia* thrives in arid soils as at Malta, it does not follow that non-calcareous, but saline and brick dust soil will suit it.

Table of areas of Reserved Forest.

34. The table appended to this report will show the comparative increase and decrease in all forests at a glance. It represents a considerable improvement and accuracy over that of 1874, and I hope still further to improve it in future years.

SECTION II.—PRESCRIPTIVE RIGHTS, &c.

SUTLEJ DIVISION.

Rights in Sutlej Forests.

35. No change has taken place, *vide* paras. 41-2 of Report for 1874.

Free grants.

36. The following free grants of timber to Zemindars are gathered from the Reports :—

KIND OF TIMBER.	1871.	1872.	1873.	1874.	1875.
Deodar	520	...	613	445	119
P. Excelsa	1,870	5,133	5,512	10,628	6,107

N. B.—These two kinds are all that are granted, and always from undemarcated forests. It would seem that people cut inferior trees for firewood, &c., without record.

Bias Division.

System of rates in Kangra.

37. Has a complicated system of arbitrary rates for (1) Zemindars, (2) merchants and towns-people to purchase wood at, (3) for the public (?)

I regret to confess that I do not understand this system, and that I have no idea of the authority on which these things proceed; they appear to "have been always so." I make this remark in hope that some one possessed of information will enlighten me.*

The amount during five years.

38. The following table since 1871 shows grants at Zemindari rates (or free where indicated). F = free to Public Work, &c. (*vide* para. 106).

There is some doubt about the 1875 figures between Mr. Duff and Colonel Stenhouse's statements :—

	Kulu and Adjuncts.					*Kangra Tehsil (not including Kangra Tehsil under the District).*					
Kind of wood ...	1871.	1872.	1873.	1874.	1875.	1871.	1872.	1873.	1874.	1875.	Total 5 years.
Deodar ...	62	51	47 F.	21 F. 117	363 F. 280	...	...	...	...	...	861
Kail—(P. Excelsa),	817 F.	8,634 perhaps includes some other pines	19,292 F.	14,363 F. 74	15,267 F ...	...	...	...	...	...	65,756
Chil (P. longifolia)	...	...	..	248 F. ...	581 F. ...	...	...	310	1,332	5 F. 77	2,553
Abies and *Picea* (Rai and Tos) ...	...	...	...	5,032 F.	6,252 F ...	...	...	...	...	...	11,284
Other woods ...	...	44	166 F.	50 F. 2	64 F ...	...	..	1,566	981	87 F 192	3,108
Bamboos ...	..	...	...	...	17,230 F ...	...	...	78,825 F	29,120 F	21,580 F.	1,46,755

Ravi Division.

Rights in Chumba Forests.

39. All rights allowed (or rather privileges, for there are no such things as rights in Forests in Chumba) in reserved forests are strictly recorded under Rule 11 (proviso) of the Lease and Appendix. It is the determination of these matters that chiefly is the cause why the demarcation of reserves (before alluded to) cannot be disposed of sooner. A State official or the Superintendent himself has to enquire into all our reserve proposals, both as to the possibility of absolute exclusion of all privileges where that is proposed, and as to the suitability of the provision made when from the situation of the forest it is necessary to allow certain rights under proviso to Rule 11.

* Colonel Stenhouse informs me that he can find in the Bias office no written authority for such a practice

We have heard nothing of free grants of timber by the State.

Chenab Division.

The same in Pangi (Chenab.)

40. The same remarks apply. A discussion arose as to whether the collection of minor produce, notably of Madder root and "Sikri," (a yellow dye Root *Datiscus Cannabina)* should be permitted; this has since been adjusted, it is hoped satisfactorily in practice, but time alone can shew this. In case of damage done to the forest, the collection can be stopped.

Minor produce collections.

Jhelum Division.

Hazara Forests.

41. In all reserved forests rights being perfectly definite, no grants have been made beyond the strictly recorded grazing rights. In the Phalkot forest, 62 Ghumaos 4 Kanals 9 Murlas have been recorded as burdened with a grazing, right. The areas burdened with rights are given in the Report for 1874, para 50. I have already alluded to the proposed provision for the stations of Thandiani, &c., and I hope Government will require an early settlement, as the rights were practically exercised by the Deputy Commissioner, though without authority, and it would only lead to complication, if I were to attempt to insist on ignoring such action (as I perhaps ought to do) till sanction is obtained.

Lands taken up for Civil Stations and their grazing.

42. As to material granted from unreserved forests, we have no data. Trees have been felled by thousands during the last few years, a vast number without permit, under the vague provision of the rules that if they are required for domestic and agricultural purposes they may be taken at will.

Utilization of unreserved forests.

Proposals sent up.

It is now proposed to put the whole of the Hill forests under management in Hazara, and as the subject has been sent up in great detail during 1876, further remark is unnecessary.

Fuel Reserve Central Division.

Rights in Rukhs.

43. In Lahore cultivators have the privilege of grazing on half dues (where grazing is allowed).

In Gujranwalla 30 Rukhs near the "Bar" have been divided into 8 blocks which are sold to cattle owners only and not to outsiders. The other Rukhs are auctioned in open markets.

No changes are reported in the other districts.

The rules of 1873.

44. In 1873, it was provided that villagers who were badly off for fuel and wood from their own lands, should get wood (stacked for them) for fuel on payment into a Tehsil of a fixed price.

2. That any Tehsildar or Forest officer may give brushwood for fences by permit to villages entered on a list prepared by the District officer.

3. That trees be marked for cutting by Zemindars, and that a free permit being issued, the holder can get one or more of the trees marked on presenting his permit to the watcher.

As a special report has been called for on the rules, I am not in a position to say how they work here. As far as I am aware, the first rule has not worked, as no one has ever applied for such wood; and as regards the 2nd and 3rd, people get free permits for anything they want.

Northern Division.

Settlement of Northern Rukhs.

45. A settlement of rights is much wanted. People have chosen to cultivate all the land left them as forest, and now require the free user of forests reserved for Government at settlement. It seems that the Salt Range Rukhs, though nominally leased out to grazing every year, are practically subject to grazing rights on payment of fees. Forest conservancy is therefore at a practical stand-still in this range, and the terrible fact that the ravines and torrents from these hills are getting worse and worse, and that salt is washed out of the soil and down on to the culturable land below, apparently excite no kind of interest in the minds of the local authorities. While the smallest outbreak of small-pox or cholera would at once evoke a detailed report, the great evil that is going on from bad to worse in the Jhelum Salt Range is not recognized. There is not an acre of ground that 12 years ago was declared to be the absolute property of Government (modified however by *reasonable* grazing rights of local inhabitants only), that is not now grazed over by every one that pleases to pay the miserable fee, and that has not the last traces of its vegetation cut down at pleasure for fences and domestic wants, the villages having deliberately cultivated their own formerly abundant waste lands.

Alarming consequences of denudation of the Salt Range excite no attention.

If I get a competent officer in this Division, a demarcation of necessary forest will be proposed, but unless the present local apathy and total disbelief in the utility of preserving wood on the Salt Range are much modified, the proposal will only be made to be declared impossible.

Gujrat and Bhera of Shahpur are better off.

46. In the Bhera Tehsil of Shahpur and in Gujrat alone it would appear that the Rukhs are really free of rights, except the Pabbi hills of the latter district, in which grazing is permitted, but goats and camels are to be excluded (by consent of the Deputy Commissioner) next year (1877). We can also enclose portions at a time for planting and reproduction.

Rawulpindi Division.

Rights in Rawulpindi.

47. The remarks in the section on demarcation explain the position of the Rukhs. Those of which we have the 'complete control' are unburdened.

Murree and Kahuta Rukhs are still in confusion as noted.

Heavy cuttings effected by right-holders on permit.

Data for past years as to grants of trees to the people are not forthcoming, but during 1875 the following grants were made free, and it is believed thousands more trees felled for cultivation, clearing, and otherwise, without any restraint.

Description of Trees.	Murree.	Kahuta.	Total.
Pine (Chíl) green	753	139	892
Do. dry	...	1	1
Shísham (D. Sissu)	80	29	109
Tút (Mulberry)	...	174	174
Tún (*Cedrela Tuna*)	...	1	1
Kangar (*Pistacia Integerima*)...	14	...	14
Dráwá (*Cedrela T. Serrata*)	11	...	11
Barungî (*Oak Q. Dilatata*)	2	...	2
Rhîn (*Do.*) *Q. Incana*	90	...	90
Borîn (*Do.*) *Q. Ilex*	89	...	89
Drek (*Melia Az.*)	...	129	129
Phuláh (*A Modesta*)	...	402	402
Khair (*A Catechu*)	...	8	8
Kákó (*Eleagnus Spec?*)	...	3	3
Paludar (*P. Webbiana*)	2	...	2
Biâr (*Pinus Excelsa*)	76	...	76
"Bankâth" (Miscellaneous trees)	33,326	3,887	37,213
Coolie loads (brushwood, &c.)	...	48	48

Plantation Division.

Rights in Plantation.

48. Is unburdened with rights, saving only the recorded life right in Rukh Gandian and in 65 acres of Rukh Shahpur, which is given in exchange for a similar area included in the Changa Manga Circle Plantation.

SECTION III.—PROTECTION, FOREST OFFENCES, &c.

Establishment.

Revision of Establishment.

49. No change took place during the year; but a revision is being considered this year owing, 1st, to the fact that orders have been issued (and not before they were wanted) regarding temporary and permanent establishment, it being found that much establishment was charged to "A" Working Heads; and, 2nd, that there being a considerable clerical or arithmetical error in the sanction of 1874, the Jhelum Division was left almost without any establishment. Whenever an establishment is permanently defective it is impossible to help charges creeping in under "A" heads, for the work must be done somehow.

I hope before very long to have put this on a proper footing.

Protection and Forest Offences.

Chief offences of the year.

50. The statistics will be found in the table appended. On the *Sutlej* the Office Clerk absconded with Rs. 200 cash, which he had realized by the sale of 28 stranded logs. Also a Mr. Rogers, who was temporarily employed on timber works, having previously borne an excellent character for intelligence and hard work, misappropriated Government money to the extent of 1,300 Rupees, and has been convicted and sentenced to 3 months' rigorous imprisonment. Rs. 700 had been recovered.

No trouble has been given regarding waif by any of the States on the river.

50A. The Bias Division had a large number of petty cases. Of 565 persons arrested, 550 were convicted or not yet tried, but this probably includes all petty cattle cases, &c., and in any case the number of convictions show that unfounded complaints were not made.

51. On the *Chenab*, Gulzari Mull and Phopan, Forest Guards, 1st Grade, were dismissed for insubordination and misconduct. Another (Alli Bux) was dismissed on conviction of embezzlement at Multan ; he was sentenced to one year's imprisonment and Rs. 50 fine.

52. On the *Ravi*, the Officer invested with subordinate Magisterial powers has found them of great assistance, and has used them almost wholly in preparing cases for trial by a Magistrate under Section 45, Act X. of 1872.

One or two trifling fires took place, but no damage was done.

53. On the *Jhelum*, the establishment has been in great difficulty owing to a clerical error in the sanction of 1874. Some temporary hands were therefore employed. This is now being rectified.

Security.

54. On this river and on the Chenab, note is made that security has been taken from all employés. Orders were issued on this subject, and Conservator is again attending to the subject.

Uniforms.

55. The time has now come when a regular uniform should be worn. It was found on the Jhelum that the staff were interested on the subject, and were jealous of the right to wear certain marks shewing differences of rank. This is desirable. Forest Rangers on Rs. 50 and officials down to Rs. 20 might be required to provide their own uniform. But those on lower pay ought to be provided by Government. This would cost very little and it is just as essential that Forest officers should be in uniform as policemen, otherwise who is to know, when warned against any act by a person in plain clothes, that he is an official entitled so to warn him. In case of necessity for arrest, this point is of still greater importance. I hope the Government will express approval of the proposal.

Frauds on the Jhelum.

56. A heavy case of fraudulent sale of timber by two Foresters on the Jhelum was brought to trial and resulted in conviction. A special report of this case has been made.

Fines should be credited as compensation.

Mr. Sparling remarks: "Offences in this Division are generally of three kinds—cattle trespass, firing the forest, or destroying timber (*vide* table of offences). The fines if credited to the

Forest account of the Division would increase the revenue considerably, being Rs. 20,061, and considering that *nothing has been given by way of compensation*, where trees have been cut, or other damage done to the forest, such fines ought to be included in the Register of Forest Revenue.

Orders requested

I would concur in these remarks and invite the consideration of Government.

57. Pounds for cattle are much required at Police "Choukies" near the forest, those at present established are in most cases 20 and 30 miles from the forest.

Cattle pounds wanted.

58. Mr. Sparling wishes much to have Magisterial power. The Deputy Commissioner I believe is by no means averse to this. Mr. Sparling is from his character and remarkably sensible way of dealing with the people well fitted to have these powers. He would rarely exercise them, but the knowledge that he possessed them would prevent offences, and enable petty cases to be disposed of without sending the people 20 or 30 miles for trial, and causing the absence from their beats of Forest officials.

Magesterial powers

59. The Kashmir employés have been active as usual in appropriating waif, but as Government has passed orders on the subject, it is hoped this will be the last year of such trouble.

Waif appropriated as usual by Kashmir.

Fuel Reserve Central Division.

60. The subject of security from employés here also has received adequate attention The table of offences shows both fines inflicted on subordinates departmentally and also criminal trials. Mr. Browne remarks on the trouble given by some of the old Rukh Darogahs, who having been many years in the place, have become lazy or unable to move about These moreover have been found to have acquired an undue influence in disposing of the leases for grazing. It has been necessary to effect some transfers.

Forest cases in Rukhs

61. Mr. Browne remarks, and I quite agree with him, on the insufficient staff and the great inconvenience felt in consequence. Mr. Ellis being on special demarcation survey work, Mr. Browne has no Assistant of any kind available for general work.

Inadequacy of the controlling staff

Fuel Reserve Northern Division.

62. Some changes of subordinates took place owing to complaints of misconduct. One of these persons, Nurulla of Khushab, I should certainly have dismissed; my predecessor however thought otherwise, so I directed his transfer.

Northern Rukhs Subordinates

Mr. Hillier seems to have a very insufficient control over his subordinates, and considers that some of the watchers are not really entertained at all; this if true shews that his system of requiring weekly diaries and of managing the establishment generally is inefficient.

Inefficient control.

Rawulpindi Division.

63. Fires are the great difficulty in this Division. They occur with greater or less frequency according as the District Officer chooses to repress them. The Forest Officer can do

Fires in Rawulpindi.

nothing, having no power. Thirty-two fires occurred, most of these were not separate cases, but arose from re-kindling the fire extinguished in the same locality.

No. of fires.	Tehsil.	Range.	Estimated area over which the fire extended.		REMARKS.*
			Square Miles.	Acres.	
22	Murree* ...	Murree ...	32	14	* This area is made up of several forests and tracts burnt 2 or 3 times over, not at all different fires.
6	Kahuta ...	Kahuta ...	0	112	
4	Rawulpindi ...	Rawulpindi ...	1	411	
32			33	537	

Arrangements made by Mr. Perkins

Mr. Perkins, Deputy Commissioner, introduced the effective practice of closing the burnt forests for three years, thus cutting off the advantage to the people of grass obtained by burning. but then this requires the District Officer to insist on the closing, otherwise, as at present, all that can be done is to pound cattle found in the prohibited areas, and the people care nothing for the trivial fines inflicted.

It is impossible to fence the enclosed places on the ground of expense.

PLANTATION DIVISION.

Fire at Nag Plantation.

64. In the Nag Plantation (Amritsur) a fire occurred over 150 acres; unfortunately as the place was still stocked with tall *Saccharum* grass, and there was a wind, the fire could not be got under. The trees were burnt, but have all been coppiced and are shooting out again successfully. Investigation made on the spot with the aid of the District Superintendent of Police failed to elicit the origin of the fire.

A trifling fire occurred in an unplanted portion of Jhok (Lahore Sailaba), the fire spreading from a neighbouring field in which the old cotton stalks were being burnt. No damage was done.

SECTION IV.—MANAGEMENT AND IMPROVEMENT OF FORESTS.

SUTLEJ DIVISION.

Resumé of five years' work.

65. In 1871, Conservator visited the place. There was an artificial experimental plantation at Sholtu on a bit of boulder bed above the present river level. Nachar was the only forest in which natural reproduction had been aided; there were various nursery beds and plots of seedlings (para. 180 of the Report).

In 1872 —Nothing is said beyond that these localities continued to grow successfully (Sholtu is now left: only protection given to it).

N. B —Divisional Officers are requested carefully to carry on this narrative next year, and to see tha matters are not lost sight of, by being mentioned in one year, and then dropped.

In 1873 —The same, and the forest of Nachar is fenced. This appears to have been West Nachar.

In 1874 —It is said that the E. portion of Nachar was fenced and deodar sown in prepared patches.

Work of 1875.

In the year under report.—Colonel Batchelor should have more definitely stated the work to be done as provided by the Working Plan, and how far it was carried out.

(*a*) The whole Nachar E. and W. is now fenced in, and in E. Nachar where no reproduction was going on, the ground has been dug up and deodar seed sown.

(*b*) 30 acres of land adjacent to Rarang forest has been turned up and sown with deodar, the object being to restore and extend into a compact belt the "Rarang forest."

BEAS DIVISION.—(*Kulu.*)

66 In 1871.—The Dungri forest was taken in hand, fenced and cleared of old timber ; 35,557 deodar seedlings planted and covered with shades.

In 1872.—24 acres of deodar planting in the "Upper Beas" (Forest not stated), which brought up the area to 141 acres ; 10 per cent. of plants only failed.

In 1873.—We are told that 143 acres of "forest" were surrounded by wire fencing. (Query = the 141 acres referred to ?). It is added that the total area of "plantations" is 722 acres, which includes, I presume, 510 acres in the plains (a river island of indifferent Sheesham). The Dana-bihal forest is mentioned as one in which sowings had been made.

In Latura forest (Seoraj) 67 acres worked out were fenced and sown.

In 1874.—It is said that 80 acres in Blajdar (Seoraj) were cleared and sown, and 50 acres in Dudlu forest. In Dungri, on the old slide, and in Dana-bihal, 46,886 seedlings were put out (75 per cent. success). Kulu is said to possess 13 Spanish Chesnuts, fine and healthy ; and 25 seeds sown germinated.

Work of 1875.

In the year under report, it is stated that in Dungri, Dana-bihal, Sial-bial, and Monalghan forest, 32,800 seedlings were put out, and that 80 per cent. of 1874 plants were doing well. Old fences were repaired and Monalghan fenced with galvanized iron wire. In Dungri, Monalghan and Dudlu forests, also 14 maunds of seed were sown, and 4 maunds 14 seers in nurseries close to the forest house at Monali.

Conclusion arrived at.

It is clear that these narratives want connecting and the condition of each locality as a whole reported on.

KANGRA —(*Forests in Nurpur, Hamirpur and Dera.*)

Bias Division resumé.

67. In 1871.—Nothing recorded.

In 1872.—Central Indian Bamboo had been sown in Dhamtal and had grown to 2 feet by date of report.

In 1873.—362 healthy fine Mahogany in Nurpur; chiteil seed sown of Shisham, Cork oak, *Acacia Stipulata*, and *A. Speciosa*; also in Dhamtal (Nurpur) 5,000 Bamboo plants were established.

In 1874.—Nothing is reported.

Work of 1875.

In the year under report, 5 maunds of Chil and 4 maunds of Shisham, Siras and Bakhain, the Catechu Acacia and the Bahera were sown in Tattal, Chitril and Bhali (Nurpur) and are fit for transplanting.

The 45 "surviving" Mahogany plants turn out to be *Eucalyptus (vide supra.* 1873).

In Derah 60 acres out of 114 succeeded with Chil sowings (at Nalyan and Jamoli). Toon seed sown at Balwal has succeeded fairly. "Kakkar" and Siris failed.

EXPERIMENTS.

Cork Oak.

68. 6 Wardian cases of Cork Oak were distributed :—

2 to Captain Harrison, Palampur.
1 to Assistant Commissioner for Lower Kulu.
3 to Captain Lee for Upper Kulu.

When fit to remove, Government has right to half the surviving plants. (N. B. for next year.)

HUSHYARPUR.

69. In 1871.—30 seers of Chil seed were sown in Loharu broadcast, and germinated freely.

In 1872.—Bamboo from Central India was sown in June in Loharu and Karnpur; these had grown to 4′ 8″ at date of report.

In 1873.—Nothing is recorded.

In 1874.—It is said that in Hoshyarpur Reserves (Loharu and Karnpur) 13,150 Central India Bamboo plants were reported 'alive.' Chil has done well in Loharu, but not other seeds (Tun, Shisham and Jamun).

In the year under report.—5 maunds 38 seers of Chil were sown in Loharu and are doing well; (24 acres) the other kinds (Tun, Jamun and Shisham) have not done well, and a large number of bamboo died (cause not stated).

RAVI DIVISION.—*(Ravi River).*

Chumba Forest resumé.

70. In 1871.—(*a*) Deodar 2½ acres at Lamu (Choli) began in 1868, plot of 10 acres. (*b*) Site of 25 acres selected at Siura (near Barmaor). (*c*) 50 acres selected at Bassu and 10 acres planted, 50 per cent. success. (*d*) 4½ acres at Guari (bad seed). (*e*) 23¾ acres at Lagti near Barnota (Chaurah) success. (*f*) 8½ acres (Saniwal) refenced.

In 1872.—Kugti (a forest to be well treated as presenting an extensive area free of rights). Experiments made, but with poor plants. Fencing of Lamu, Chanota, Guari, Barnota, Dhaur and Kalwal forests. Chanota, Kugti, Dhaur forests cleared, and seed dibbled in.

(*a*) Lamu (2½ acres 1871) failed and abandoned. (*b*) *Siura* proved a failure. (*c*) *Bassu* divided into 12 compartments, *some* seedlings of 1871 from 3″ to 5″ high. 8,706 young trees put out and doing well. (Cover given the trees.) New nurseries also made here.

50 acres of Dhaur fenced and nursery formed (germinated freely).

In 1873.—Dhaur forest cleared and fence repaired. Kalwal, Jhang-Banil; Lamu and Suttu forests ditto; ditto. Thinning in Hassar and Lamu. Plantation of Bassu completed with success; Dhauri 25 acres ditto; and Jang-hanil ditto.

In 1874.—Forest of Kugti, Kalwal, Dhaur and Pui, thinned and cleared of brushwood and debris. "The portion of the Bassu plantation" destroyed by fire refenced, 50 acres *more* at Bassu sown with deodar (no information about this fire that I can find B. P.).

Work of 1875.

In the year under report, seeds were dibbled in the Dhaur plantation, perhaps this means the Dhaur forest, not the plantation of 25 acres which was said in 1873 to be a success. This is Mr. Mackay's account. Mr. Allan says: Dhaur *plantation* is a failure, but the fenced portion of the cut-out *forest* has reproduced beautifully. Bassu has a fair show of deodar and some young walnuts; in the shade the deodar does well, but Bassu is too exposed.

Kalatop.

Work of 1875—Kalatop.

71. In 1871.—Partial success in stocking nurseries. In 1872.—No detail. In 1873.—Sowing in two nurseries successful. Transplants also successful, but no detail. In 1874.—1,50,000 successful removals from one nursery to another. In the year under report instead of telling us in what compartments under the Working Plan plantation work has been carried out, we learn that "the whole place is covered with young conifers, &c.;' phrases like this are strongly to be deprecated. After this statement it appears that only 2,911 plants were put out in compartment 11.

Bakloh.

72. Chil nurseries in 1873 good, but transplants failed (as might have been expected B. P.) In 1874 transplants also failed, but natural reproduction is good within the enclosure (I should like to be sure of this B. P.).

Work of 1875—Bakloh

In the year under report, it is satisfactory to learn that transplanting Chil was stopped, and broadcast sowing on loosened soil succeeded. Here again it is vaguely said that the "whole reserve is covered with *natural* seedlings."

We are also told that the Eucalypti (not a word of this heard before) planted out in 1873, only 3 are alive, and are about 10 feet high, and that of 13,019

deodar seedlings planted for experiment on Bara (one of the Bakloh hills), not more than 10 per cent. are alive. The healthy look or otherwise is not stated. The elevation *may* be too low, as Mr. Allan says. But Bakloh is certainly not too high for some species of *Eucalyptus*.

Conclusions drawn from the resumé of Ravi work.

73. My review of the work concludes :—

(*a.*)—That planting experiments have been too desultory and in too many places.

(*b.*)—That we must have a distinct and clear report of the state of every plot which is an artificial plantation, and consider what to do with it.

(*c.*)—Then we will confine work to one place, probably Bassu, which if too exposed may be treated first with walnut and *Pinus Excelsa* at good distances, and then after 4 or 5 years deodar put in.

(*d.*)—All plantations to be rigidly confined to extension or reparation of blanks of existing forests, and those where export is easy, or rights, &c., very favorable as Kugti forest.

(*e.*)—There has been much carelessness in keeping up the plantation note books, and great indifference in visiting either by native or European Officers the different plantations. If the Controlling Officer cannot visit, the Forester of the beat could at least report the state of the place, and keep the fence up and weed the soil.

CHENAB DIVISION.—(*Pangi Forests of Chumba.*)

Resumé of Pangi forests.

74. In 1871.—The old Purti plantation on a sandy, rocky level close to the river was interplanted with 2,000 seedlings, but this was a final trial to keep up a place that should never have been started. *Chau*, the slope above Purti, was better; it was extended by 5 acres, and the old lines interplanted. A slope on the Bamal hill was proposed for planting and a nursery formed.

In 1872.—Further attempt and failure at Purti. A plantation at Ajog had 3,250 plants put out, which were outdone by the self-grown seedlings, "which are numerous and thriving." *Chau* was also further extended by 26 acres and Bamal had 80 acres cleared and plants put out, but the fact stated by the officer in charge were shown by Mr. Ribbentrop to be unreliable (para. 48.)

In 1873.—Blanks in Chao and Bamal were filled up, but ⅔ died and were again re-stocked with somewhat better success. Nurseries succeeded at Bamal and failed at Ajog; orders were given to concentrate work at Ajog.

In 1874.—No planting was done. It is said of Ajog and Purti that they are flat boulder beds. This is certainly not the case with Ajog (*vide* 1872). The former places, Purti, Chau, Bamal and Ajog were struck off the list of plantations. Of course in 1875 nothing has been done.

Conservator objects to results.

75. I consider this course with Ajog and Bamal, very unsatisfactory. If a decently intelligent officer cannot succeed at least with Bamal, he does not know his business. We must

in the Chenab endeavour to extend our resources of deodar to suitable sites where launching is inexpensive. Most of the natural forests are very inaccessible. Bamal is easily treated, but of course requires first a thinning of the hazel, and on the open places a planting of some nurse *before* the deodar is put in. Walnut or ash would do, or even oak.

Jhelum Division.

Jhelum resumé.

76. We have to deal with three localities.

Dungagalli Range.

In 1871, we had not yet charge. In 1872, 12 acres at Changlagalli were cleared and sown with deodar, ash and *P. Excelsa*. Also 8,000 *P. Excelsa* planted out. In 1873, the Changlagalli *seedlings* were attacked by insects and many failed ; the *P. E.* plants were mostly doing well. An experiment with Eucalyptus failed (as might have been expected at over 8,000 feet) from frost. A large nursery bed of "thin-shelled" walnuts was planted and thrive well. Another nursery of 12 acres deodar formed and succeeded. In 1874, there was a deodar nursery at Kujagalli spoken of. This I have seen, it is tolerably successful.

In the year under report, a nursery at Kutli (10 acres) was sown with deodar, 3,000 plants of *Excelsa* were put out in the N. W. side of Changlagalli, and nearly 2,000 deodar on the east above the main road to Abbottabad. I have since seen the plantings and the nurseries, and they are for the most part successful. I hope to return a favorable account of 1876 when the time comes. The nursery and pine plantings at Changlagalli cover 44 acres.

Kaghan.

77. In 1871, the open hill slope below the natural mixed deodar forest of Malkandi had 6,136 seedlings (deodar) put out. In 1872, 5,000 seedlings from the forest were put out in July, they were 9″ high; in October 1,000 more, and the place fenced. In 1873, a plantation at Kamal (Kamalhan) with 5,526 young trees is said to be flourishing. Nothing is said of Kaghan in 1874 and 1875. I visited Malkandi in 1876, and will report when the time comes.

Khanpur Range.

78. First notice in 1873, *viz.*, that experiments in growing deodar on the highest points (3,629—4,430 feet) promised well. In 1874 it is said these sowings have succeeded. In the year under report nothing further was done. The Spanish Chesnuts will be spoken of in 1876.

Method of working till plans are drawn up.

78A. In the Jhelum Division generally, though the area of forest is secured, no working plans have been made. The greatest care has therefore been used at present to allow of exploitation, chiefly of fallen and drift timber, and of standing dead trees, other inferior growing trees being cautiously removed. Now that an Assistant is obtained, the valuation of the forests will be commenced forthwith. The number of trees actually felled will be seen in the 5th Section.

Fuel Reserve Central Division.

Rukhs—resumé of work.

79. Here we have two classes of improvement : (*a*) closing against grazing and cutting bushes ; (*b*) sowing or planting.

In 1871, the first year of transfer, little was done. 10,000 acres in Montgomery were *closed* ; also in Lahore, Kot Lakpat, and Tera.

In 1872, an attempt to lease out Rukh lands to cultivation, conditional on sowing tree seeds in lines, failed.

In Lahore, Kot Lakpat, and Tera, 7,871 acres were sown with jhand, Reru and Shisham in trenches at 5 feet, and failed for want of rain. Again, it is said, that Kot Lakpat (portion only) and all Tera were closed. 10,000 acres in Rukh No. 15 of Multan were *closed* (total area 31,648 acres).

In 1873.—In Lahore 1,460 acres were sown with bér, jhand and sissu ; the latter failed, the former germinated, but results were not known. In Montgomery 230 acres were similarly treated " with a fair amount of success."

19 blocks aggregating 49,294 acres (where, is not said) were *closed.*

In 1874, another attempt in Lahore and Amritsur and Multan to lease out cultivation with the condition of planting failed.

In Montgomery 720 acres sown failed from drought.

Work of 1875.

In the year under report, the following Rukhs have been closed:—

Lahore, 8 Rukhs, 23,608 acres—apparently imperfectly. If there may be Government Rukhs in Lahore as Mr. Browne says that cannot be treated as forest without injuring the Zemindars, he should propose striking them off his roll and returning to the District.

Gujranwalla, 2 Rukhs of 10,496 acres—closed to all except buffaloes and cows. (This is not much use.)

Montgomery, 4 Rukhs, 10,000 acres. These have been closed for the last three years ; grass is collected by cutting.

In *Multan*, 2,172 acres closed after cutting for Commissariat. This area will I hope be brought into one of the blocks by Mr. Ellis, who is surveying in Multan.

Closing ineffective for want of supervision.

Mr. Browne adds, however, that the closing is a source of profit to the Native Establishment. As they allow the cattle in at night (on payment of a bribe), Mr. Browne thinks that this is due to the want of European supervision, which is certainly the case. Another Assistant is wanted, or rather *at least* one, for there is practically none at present. Guards on closed Rukhs, should be warned that on evidence of the appearance of the Rukh proving regular grazing, (not an accidental trespass), they will be dismissed.

During the year, 777 acres in Lahore and 145 in Amritsur were again given out to cultivation on condition of sowing tree seeds ; this only succeeded in one case (Rodeshah 50 acres), where however *transplants*, not seeds, were used. This latter method (giving the plants free) might once more be tried.

Fuel Reserve Northern.

Northern Rukhs resumé.

80. In 1871.—No details, save that "Belas" and Rukhs Sohawa, Vasu, Dhul and Mari (Gujrat District) were *closed.*

In 1872.—Thinning in the Jhelum bela (Pira Ghaib). In Rukh Dhul (Gujrat) 8 mds. of various seeds sown, (not successful); attempts to cultivate with trees in lines here also failed.

Experiment in a Gujrat Bar Rukh (Behlolpur) very dry, but good stiff loam:—(*a*) sowing in plough furrows; (*b*) in squares 1′ × 1′ × 1′ at 5′ apart. (401 acres cost Rs. 102—97 with plough, 304 in squares). The squares costing Rs. 4-6-0 an acre to sow, succeeded. Some planting in Rukh Garat (Jhelum—in same way) succeeded in squares. Sanhatta (*Dodonæa*) succeeded.

The remarks on Bela planting (Report of 1872, para. 69, &c.) should be borne in mind.

In 1873.—Thinnings in Belas Pira Ghaib and Seila. Sowings of 1872 in Dhul and Mari failed. Very little left of this in Garat. Strong transplants considered more likely to succeed.

In 1874.—Sohawa and Bachhar (Gujrat) were closed. The former closings seem to have been forgotten and the Rukhs re-opened. This is very objectionable. Closing for at *least* 10 years is needed. Garat in Jhelum was also closed, but not successfully, as cattle got in.

In Rukh Bachhar, bér and kikar sown, germinated, but died from drought. In Garat kikar sowings only poorly succeeded, and a few transplants of shisham succeeded near nullahs.

In Rukh Pabbi (the Range of hills in N. of Gujrat) 1,000 acres were sown with kikar,—very partial success. Shisham transplants failed.

Work of 1875

In the year under report, extension of the Bela plantings were partly successful, but of course in these lands the advantage of cheap and easy work has to be counterbalanced by occasional loss of land and labor from floods, and from seed beds being silted up, &c. This ought not to discourage us.

500 shisham trees were transplanted from *Bela* land to Garat; 50 per cent. died. 22 acres sown with kikar seed partially came up. Sowing in "potets" or holes was tried, but did not succeed.

Mr. Hillier gives these facts from report, as he was not in charge during the working season, and as no regular book has been kept up (contrary to orders) I regard the report for the year as unsatisfactory.

Rawulpindi Division.

Forest of Rawulpindi resumé

81. In 1871, two nurseries were started, one at Tret and one in the Margulla hills, intended to supply plants for putting out in the hills, both upper and lower. In 1872, it was

said that these nurseries and another at Attok had failed. In 1873, no detail is given of any plantation work. In 1874, it was said that *some* plots in Seribari forest were prepared for sowings (what with ?) and fenced. Former sowings are alluded to and it is said that they always died from heat in May and June.

Work of 1875.

In the year under report, Rukh Khairimurat (17,000 acres) has been entirely closed since 1st April 1875. On the north side olive shoots are already beginning to over-top the brushwood. This was previously never the case with grazing allowed. 25 small plots selected (and noted in the official plantation book), to show all varieties of soil and exposure, were dug, fenced and sown with phulahi (when last heard of in July this year, they were doing well). Seed in large quantities was also dibbled in over the Rukh. The same course was pursued with Kawagarh (4,400 acres), but as only camels and goats are excluded (to make the closing gradual) only four plots were sown. Kherimar (3,000 acres) was partially closed by excluding goats and camels.

Burmese bamboo failed (as might be expected) and Cork oak *seed* proved bad. A few Spanish Chesnuts survive at Ghoragalli (5,400 feet), but most were destroyed by porcupines, which have been bad this year, not even sparing potatoes.

General conclusions as to Rukh improvement.

82. From this resumé of Rukh improvement attempts, we may I think safely draw certain conclusions :—

(*a*)—That there is the greatest need as regard Rukhs in the plains, to reduce the area to compact blocks of the best land situated near the lines of road, railway or market, and leave the rest without establishment, except for revenue purposes. We cannot afford to go on as now we are doing.

(*b*)—That cultivation of plain Rukhs must be effected by canal or well irrigation, but that experiments like these in Rukh Behlolpur (Gujrat) of sowing in squares should be further tried. Contracts to cultivate fail altogether.

(*c*)—That though many failures have been experienced, the attempts made have not been thrown away.

(*d*)—That closing of Rukhs cut out must be much more systematically enforced. If a Rukh has had its fuel cut off, and it is intended to keep that Rukh as a fuel reserve, it *must* be closed, and especially bushes must not be cut in it (Malla—*Zizyphus nummularia*).

(*e*)—That cultivation of the hard stony Rukh like Pabbi and Gurat (works of reboisement) are on a different footing; and having much more importance to the country than Rukhs merely supplying fuel, great efforts should be made to reboise them.

Absolute protection so as to secure every blade of vegetation being left is the first need. Then the sowing of *Sanhatta* offers the best success, together with seeds of all kinds of weeds and grass. It is unwise to take transplants out of soft, rich wet sailaba land

and expect them to live in marl.* The strongest transplants from the driest nursery should be selected, and put in here and there in "potets" or holes in the most favorable places, and in all sheltered nooks. Establish trees gradually, not try by whole acres at a time. Sowing prepared squares 1′ × 1′ × 1′ at four feet apart, with 'Sanhatta' to be combined with this. These suggestions may be worked out, and *one* definite reboisement experiment undertaken next year in the Pabbi Range.

WORKS AND BUILDINGS, &c.

Sutlej Division.

Roads, houses and slides on Sutlej.

83. It is said that 1,092 mines were sprung in making the road from Bruere (?) to Sapni Forest and in timber slides. This is not a satisfactory way of reporting.

It would be especially interesting to know what slides were made. As in this Division it would appear that a large proportion of the timber is smashed in launching, and the Government timber ought *never* to be launched without properly prepared slides, unless there is a natural descent for rolling so smooth that logs cannot be broken.

According to the Working Plan, a Forest house was built above Kilba, partly out of the materials of Mr. Paul's old house.*

Beas Division.

On Beas.

84. In Kulu, near Raisan, a 'bund' or break water of dry masonry, 200 feet long and 22 feet wide at base, and 10 ft. high, was built to aid floating operations by keeping logs out of side streams and branches of the river. A 2nd 'bund' of similar construction was made lower down the river.

Ravi Division.

85. The roads to Harsar and Chanota from Barmaor were repaired.

A timber road in Kalatop up to Batrigalli and through compartments 21, 20, 17, 15, and (?) was made (Mr. Allan says "and 8," but perhaps he means No. 18—No. 8 does not adjoin 15 on any side).

A hut at Kugti was erected for the Forest guard, and one at Kalatop for the Forest Ranger. What this means, I do not know.

From what I have since heard, it seems that the buildings at Kalatop were allowed to go into some dis-repair.

Chenab Division.

On Chenab.

86. The wooden bridge at Kilar was repaired by the removal of the centre beams which had sagged badly, and the insertion of new ones with longer supports.

Existing roads were kept in repair,—no new ones made.

The Bund at "Lai-ka-pher."

At the whirl-pool called Lai-ka-pher, a 'bund' was built costing Rs. 5,233 in 1873, part of it was carried away, but repairs have been since reported. This 'bund' which should save vast numbers of logs from loss, not only of ours, but of the Maharajah of Kashmir, was almost inaccessible from the extremely dangerous state of the track between Kilar and Gulabgarh in Kashmir territory. Considering the advantage this 'bund' is to the Kashmir authorities, it would be at least fair that they should be requested to make the path passable.

Road to it almost impassable.

Jhelum Division.

Work in Jhelum Division.

87. No roads made or repaired. Some inspection roads are badly wanted in the forests; it is no use trying to attain economy by neglecting such necessary works; it only throws the expenditure off one year on to the shoulders of the next, and on to the officer who happens to be in charge. A house for raftsmen was made at Jhelum depôt, and out-houses erected for the little forest rest-house at Dungagalli.

Fuel Reserve Central Division.

In Rukhs.

88. A rest house was erected, costing about Rs. 500 in the Dalla Range (Gurdaspur Forest). 6 watcher's huts in Lahore and 3 in Gujranwalla were also built.

Rawulpindi Division.

In Rawulpindi.

89. Additions to the Ghoragalli house (costing 496 rupees) have now made it a good and convenient residence. One of the walls built by Mr. Ellis will have still to be renewed.

Better method of reporting required.

90. On this branch of the subject I am not satisfied with the method of reporting.

In the Report for 1876 officers will be required to give a list of buildings, bridges, roads and slides then in existence, and in future briefly, and not in a narrative form, to state (*a*) repairs and maintenance of existing works, and (*b*) additional works executed.

Artificial Forests.

Plantation work in the Division so-called.

91. I keep the work of the Plantation Division separate, because this is a matter of creation of Artificial Forests as distinct from the extension, restoration, and filling up of blank areas in natural Forests.

Classification.

The main Divisions of the work are—(*a*) the Changa Manga Plantation; (*b*) Lahore Sailaba; (*c*) Outlying Plantations. I hope to add a fourth next year, (*d*) "Rukh planting works."

CHANGA MANGA.

State of existing compartments of Changa Manga.

92. The state of the plantations completed previous to the work of this year requires first to be noticed. It may be briefly described as 6,843 acres (excluding roads, &c.), chiefly stocked with *Dalbergia Sissu* ⅓ years ; in many compartments mixed with willow, *Zizyphus* (bér), Phulahi (*Acacia Modesta*), and a few *Eucalyptus* (about 560 trees—*see* Pro., December 1874. No. 5), and some *Acacia Arabica* (kikar) and mulberry. Salt soil blanks have cuttings of Farash (*Tamarix Articulata*) and Jhand (*Prosopis*).

Foreign trees.

Besides this there are in the garden of the Forest house a number (120) of Eucalypti growing well, and some more in nurseries. Also a number of *toon* trees and some more along the road. These suffer much by the larva of a *lepidopterous* insect (*Noctuæ* or *Bombyx Sp.?*), which eats the pith of the leading shoot. The insect has not yet been obtained for identification.

Frost.

The Acacias—*A. Arabica* and *A. Modesta*—suffer from frost : and the greater coolness of the soil produced by the tree covering of this large plantation causes harder frosts than at Lahore. The whole condition of the plantation may be described as satisfactory ; a few plots only, where Kunkur underlies the soil, having caused a failure with Shisham trees. The thinnings carried out under the working plan have had the most marked effect in increasing the growth of the trees left.

Work of 1875. New extension

93. The work of the year under report is described as follows :—

An extension of 1,000 acres in the Moujoki circle was marked out.

Water courses and trenches having been prepared, 40 acres were left as either too low, or too high for irrigation (perhaps this may be cultivated with Jhand or Farash). Of the remaining 960 acres. 902 were sown with "Jhand" at 10 feet (lines), and 50 with "reru" (*Acacia Leucophlæa*) in lines of one foot long with 4 feet between. The remaining 8 acres were planted with 6,968 plants of *Tecoura undulata.*

The winter killed 100 acres of Jhand which will have to be re-stocked. The rest was all successful.

Work in the older portion.

In the older plantation, 2,000 Chinar (*Platanus*) raised from cuttings were put out in protected places. 480 Carob trees (*Ceratonia*) were raised ; 80 were put out, the rest are in pots and are healthy.

116 plants of various species experimentally raised, including *Schleichera* (Koosam), *Gmelina*, *Kydia*, *Anogeissus*, &c., suffered from frost, but some are again shooting from the root.

THINNING.

Thinnings.

94. As we have not come to the yield period of the plantation, all cutting comes under improvement cutting, and therefore belongs to this Section and not to the next.

The operations are shown in the following Table, which is worth giving *in extenso*. The results show 37,017 maunds of saleable wood and 20,000 maunds of crown and branches unsaleable in the present state of demand :—

Statement showing area thinned in each Compartment at Changa Manga.

Block I.

No. of Compartments thinned.	Area of Compartment.	Age of Compartment.	Average height of trees.	Average girth.	Out-turn of thinnings saleable.			Estimated No. of trees left in each Compartment.	Remarks.
					Area thinned.	No. of mds. per acre.	Total.		
		Years.	Feet.	Ft. In.	Acres.	Mds.	Mds.	No.	
1	88 84	8	42	2—5	88	67·00	5,900	16,432	
2	74·65	8	42	2—5	71	34·46	2,450	13,912	
3	80·09	8	42	2—5	70	27·57	2,000	15,010	
4	133·11	8	42	2—5	93	36·56	3,400	25,004	
5	85·82	8	42	2—5	65	35·40	2,300	15,980	
6	70 50	8	42	2—5	1	20·00	20	20,300	
8	151·30	8	42	2—5	2	20·00	40	43,790	
12	118·85	6	30	1—0	12	4·17	50	35,728	
13	118 85	6	30	1—0	22	6·82	150	35,728	
14	118 85	6	30	1—0	45	1 95	87	35,728	
15	117 06	6	30	1—0	105	*Unsaleable*		35,728	
16	117·33	6	30	1—0	100	*Ditto*		35,728	
47	95·17	5	21	0—9	80	1·87	150	85,120	
48	94·68	5	21	0—9	80	1·00	85	85,120	
49	126·13	5	21	0—9	80	1·00	85	1,12,896	
50	126 13	5	21	0—9	100	18·15	1,815	1,12,896	
51	126·13	5	21	0—9	95	20 16	1,915	1,12,896	
52	126·13	5	21	0—9	100	19·00	1,900	1,12,896	
53	126·13	5	21	0—9	95	15 77	1,500	1,12,896	
54	133·02	6	29	1—2	110	12·60	1,500	1,19,146	
55	85·65	6	29	1—2	85	14·11	1,200	77,056	
56	86·09	6	29	1—2	86	17·25	1,484	75,056	

Statement showing area thinned in each Compartment at Changa Manga.—Concluded.

No. of Compartments.	Area of Compartment.	Age of Compartment.	Average height of trees.	Average girth.	Out-turn of thinnings saleable.			Estimated No. of trees left in each Compartment.	Remarks.
					Area thinned.	No. of mds per acre.	Total.		
		Years.	Ft.	Ft. In.	Acres.	Mds.	Mds.	No.	
			Block	*II.*					
31	68·02	5	35	1—2	58	21·40	1.241	62,064	
32	68·02	5	35	1—2	35	33·46	1,171	62,064	
33	58 38	5	35	1—2	27	39·69	1,070	53,083	
34	58·38	5	35	1—2	24	64·38	1,545	53,083	
35	58·38	5	35	1—2	22	63·23	1,391	53,083	
36	58·38	5	35	1—2	15	50·00	749	53,083	
37	58·38	5	35	1—2	20	56·85	1,177	53,083	
38	58·38	5	35	1—2	15	42·80	642	53,083	
			Block	*III.*					
57	115·00	3	15	0—6	10	*Unsaleable wood*		3,92,156	
58	130·07	3	15	0—6	76	Ditto		4,43,300	
61	103·05	3	15	0—6	10	Ditto		3,51,230	
64	112·45	3	15	0—6	3	Ditto		1,95,216	
65	118·66	3	15	0—6	3	Ditto		2,07,417	
74	145·51	4	18	0—6	3	Ditto		1,27,745	
75	140 39	4	18	0—6	3	Ditto		1,23,340	
					1,918	...	* 37,017	...	

* 36,015 Mds. given to F. R. C. Division.

1,002 „ „ to private purchasers.

G. G. MINNIKEN, A. C.,

In Charge Plantation Division.

95. (*b*) *Lahore Sailaba.*—So called because executed on lands aligning the River Ravi, and forming the nucleus of supply for the Northern State Railway. It consists of two circles : (1) Jugian, Shahdera, and Mahmud Buti = 1200·5 acres (15½ having been lost by erosion), and (2) Jhok and Sadhanwali = 1181·5 acres (6 acres having been lost by erosion).

Work on lands on the Ravi.

Up to the commencement of 1875, it is said that there is every reason to be satisfied with younger growth, and the trees have as a rule much improved, especially in Shahdera, Jugian and Jhok.

During the year *in No.* 1 *Circle*, 170 acres were treated with sissu and mulberry transplants, but owing to continued inundation, 20 acres succeeded; 40 acres also were treated with sissu transplants and succeeded.

Failure by floods is the occasional drawback to cheap and easy planting in these lands. Nurseries of 5 acres and 2 wells were also prepared.

152 acres of 1871 and 1872 growth were lightly thinned and the brushwood proved saleable for a small amount. Usual works of repairs, weeding, watering, &c., need not be noted

In No. 2 *Circle*—In Shahdera, 12,850 transplants for replenishment were put out with success. I regret to observe that of 101 *Eucalyptus* saplings, 20 and 257 (out of 297) seedlings were destroyed by flooding.

In Jugian, 480 acres were thinned, yielding 30 feet poles, with a diameter of 7″, weight 10,347 maunds and 6,000 maunds of brushwood. *All the yield* sold in the city of Lahore.

Mahmud Buti, 2½ acres of nursery for 1876, extension succeeded. 369 acres sown in July and 109 in September failed for flooding. Of 143 acres treated by transplants ⅓ only succeeded owing to the same cause.

Of 70,000 willow cuttings put out, 30,000 succeeded. 39 out of 198 *Eucalypti* put out have also succeeded. The erection of spurs to protect this land has already been alluded to. Although the successive recurrence of the mention of flooding looks bad, it is to be borne in mind that success is steadily if slowly gained, and the cheapness of cultivation renders it easy to re-plant much more so than in canal irrigated lands.

96. (*c*) *Outlying Plantations.*—There are most of them the original experimental plantations undertaken when planting work was first begun.

Outlying Plantations.

NAG. (*Amritsur District*).—The plantation was, subsequent to the fire alluded to above, divided into compartments, and water given to the burned compartments. Of the 370 acres covered in this plot, the growth is good, consisting of Tun, Mulberry, Shisham and a few Eucalypti. Being so near Amritsur, its produce will be valuable.

Jullundur.—Is finished ; no work ; growth is very fair.

Phillour and Ludhiana.—No work ; but both suffered from a severe wind storm, which uprooted or broke down trees, which were removed. From this cause 44 trees = 1,100 c. f.. 5,241 maunds fuel and 1,800 maunds brush were obtained. The total thinnings of different plantations may here be given :—

No.	Name of Plantation.	Produce of Thinning.			Remarks.
		Saleable wood.		Unsaleable wood.	
		Fuel.	Brushwood.		
		Maunds.	*Maunds.*	*Maunds.*	
1	Changa Manga	37,017	...	20,000	
2	Jugian	10,347	6,000	...	
3	Jhok	...	500	...	
4	Phillour	1,317	700	...	141 trees containing 1,100 cubic feet.
5	Ludhiana	3,924	1,100	...	
6	Jagadri	300	...	...	
	Total, ..	52,905	8,300	20,000	

Jagadri.—41 acres sown and destroyed by floods, 21 acres thinned, yielding 300 maunds. I do not see why this plot should have more money spent on it. I would give it up to the District as a district grove. It has a few kikar on it and chiefly kahi grass. I recommend it being finally given up.

Kathala.—(Now to be given up) 15,00,000 young trees have been successfully raised. It will now be desirable to distribute these plants to Jhelum, to stations near and along the Railway line when desired. I think also we might utilize many on the Pabbi reboisement, which I hope will soon become a familiarly known work.

Wazirabad.—Thatta-fakir-ulla. No work was done. Why this place is kept as a plantation, I do not know ; there is no ground for its being so. It is mere sand, is not large enough to be useful, and villagers would be glad to cultivate it. The tree growth is wretched.

Lahore Carob Plot—Has been fenced permanently. The expenditure on 37 acres of 1,990 rupees, is due to the expensive fencing of deodar posts and galvanized wire, which amounted to about 1,000 rupees. Without such fencing planting in so frequented a place would have been impossible. The planting, considering the method adopted (27 rupees per acre), is not excessive. The idea that the place was good for Carob trees was chimerical. However, such was the expensive precaution taken, *viz.*, digging 1,000 holes of 3 feet deep filled with good soil ; that had not the violent rains of 1875 killed the plants and brought insects which helped in the work of destruction, we might have had some success. It will now be our aim to complete the place cheaply as a nice grove, and I do not doubt to succeed with *some* Carob trees in the best parts of the soil. The Carob likes dry limestone, and possibly may do in dry marl of the Pabbi after a time ; but dry brick refuse and sulphate of soda cannot be said to suit it on any authority whatever.

Umballa.—I regret to observe a new little garden of one acre crept into our list. As only Rs. 7-6-0 has been spent on it this year, I beg that this place (quite contrary to orders issued against new little plots) may be struck off the list, and all establishment and expenditure totally prohibited.

Peshawur.—3,000 rupees have been contributed towards the draining and planting with *Eucalyptus* of 850 acres of marshy land. Previously Rs. 8,126 have been contributed.

Delhi—Is visited periodically, and report on it specially made for the guidance and information of the District authorities, to whom it belongs.

Area Statement.

97. A statement of Plantations, their area and cost, is given at the end of the report, with the usual tables.

This table ought, I conclude, to show areas of artificial forest, not plots of natural forest fenced and sown with a view to filling up blanks, glades or even large wastes.

SECTION V.—YIELD AND EXPLOITATION OF FORESTS.

Sutlej Division.

Felling on the Sutlej.

98. There were 800 deodar trees felled in the Tikru Forest. It should seem that the working plan was not followed in this. The working plan indeed prescribes this as *one* of the forests to bear a first cutting in the next five years, but certainly it would be seen that the *completion* of 1st cutting in Nachar, Yani, Kunai and Sapni (which ever could be done) were the *first* works to be taken in hand. Tikru was the least needed, and even now has only had a part of its 1st cutting done.

Wasteful launching.

99. No slide is stated to have been made ; and as far as my recollection of the place goes, the smashing of logs without a slide must have been considerable ; it is stated 10 per cent. for logs and 15 per cent. for sleepers ; this is by no means satisfactory. I am also informed that 10 per cent. is far too low. Moreover, in the absence of proper slides it is the largest and most valuable logs that get smashed, or if not smashed they get so strained and split that they are lost in the river. If of 18,000 logs launched (containing 13 cubic feet on an average), 15 per cent. were destroyed, they would have been worth at Depôt about 1,625 rupees, which might have well paid for a slide which would have launched these and other logs for *several years* in safety. It must really now be finally put an end to, that Government should launch timber like the contractors of 15 years ago, without slides.

Detail of Yield.

100. Of the 18,354 logs launched, 5,000 were yielded by the 800 trees in question; 9,199 were wind and snowfall ; 1,326 were Pinus Excelsa, and 2,554 were of timber left by Messrs. Brassey & Co. on the expiration of their term.

The form No. 11 speaks of 2,962 sleepers, which the body of Colonel Batchelor's report say 2s,179.

101 The Depôt receipts were 17,681 logs and 10 sleepers. The logs contained on an average 1,303 cubic feet. The sales were small, no demand being made. 850 logs and 939 sleepers were sold to the Sirhind Canal Works. 11,071 logs remained unsold at close of the year.

Depôt receipts.

102. These facts strongly confirm me in the opinion that it is highly objectionable to work all five rivers at once. Three at a time is the utmost at present that can be done.

Disadvantage of working all five rivers at once.

Next year nothing should be done on the Sutlej, but pursue survey, fencing, and works of reproduction. Provision to be made for one gang to go down the river and clear down to Phillour, holding one or two sales only at Phillour. Absolutely nothing more.

No possible harm can result by deffering the Working Plan yield for 3 years. The yield will extend over 8 years instead of 5, that is all.

No harm to the Working Plan of 1875.

Yield of Kalesar not stated.

103. Nothing is said of Kalesar, what was taken out of it, &c.

BEAS DIVISION.

Work on the Beas.

104. The fellings were—

	Logs.
P. Longifolia, 250 trees, Soma Chalaun Forest (Parbatti) ...	1,854
C. Deodara 20 trees (dead or drying), Ales Forest (U. Beas) ...	78
Walnut, 50 trees (Solan Valley) ...	300
Maple, 50 ,, (Do.) ...	250

These were launched except the walnut and maple, 3,462 P. scantlings launched from Seoraj in the Plach stream were carried by flood into the Beas, but most of them have been recovered.

105. 98 pieces of box-wood were purchased ; they were old and seasoned. It is said that it promised to float ; but only 15 pieces have arrived in Depôt.

Experiment with box-wood.

This was dangerous experiment, for even if dry Himalayan box will float unsupported, it certainly will sink directly it gets water-logged.

106. I beg to invite attention to the following *free* grants of timber to Public (District) Works. No other District in India, that I am aware, is burdened with such a charge. I should like to enquire the authority for this.

Free grants to Public Works.

Kulu, &c.,	Deodar	...	... 317 trees.
	Pines	...	...1,835 ,,
	Hard wood	...	... 4 ,,
Kangra, &c.,	Pines	...	... 84 ,,
	Hard wood	...	... 367 ,,
		TOTAL	... 2,607 trees.

The returns on this head in former reports are incomplete, but shew—

	1871.	1872.	1873.	1874.	1875.	TOTAL.
Deodar ...	62 (but 12 paid for)	51	173	113	317	716
Pines ...	...	A number, but not distinguished.	1,205	2,361	1,919	5,485
Other kinds ...	...	...	28	37	371	436

This represents in value (at the lowest computation taking a deodar at Rs 5, and pines, &c., at Rs. 2 all round) a sum of Rs. 15,422.

Yield of the Forests.

107. Cutting of standing material and bamboos, being regular Forest yield for sale, may be thus tabulated :—

Forest Sub-Divisions. ...	P. Longifolia.	Hard wood Trees.	Bamboos.	Sal Poles.	To whom.
Nurpur ...	36	2	200	...	P. W. D. paid for.
Ditto ...	102	169	33,900	...	Traders.
Dehra and Hamirpur ...	179	59	...	...	Traders.
Hushyarpur ...	...	...	761,797 1,100 (lance shafts.)	3,689	Ferozepur Arsenal.

Landslip in Hushyarpur Forest.

108. It is regretted to observe that a landslip occurred causing the fall of 3,018 Chil trees from 1′—8′ in girth. An account descriptive of the origin, causes and consequences of this calamity is needed.

109. It is interesting to observe that 87 maunds 30 seers of tar were made from the Chil, realizing on the quantity sold Rs. 5-8 per maund for 87 maunds 30 seers. This is profitable if the demand should keep up.

Depôt work.

110. The Depôt work shows receipts at sale Depôt to be—

1,485 Logs Deodar, 1st Class.
699 ,, ,, 2nd Class.
23,822 ,, Scantlings (some of sleeper length).
969 Pines

Of these 1,958 deodar logs were sold and 407 pine logs. 66,233 metre gauge sleepers, and 24,752 other scantlings (including balance of previous years), were sold. The Rajputana State Railway took the sleepers.

111. Nothing is said of the Kahnwan Jhil "bund." The Beas Officer should notice this in every year's report.

Kahnwan "bund".

112. The inspection of trader's rafts shows an alarming cutting of timber *somewhere.*

Trader's timber.

The figures since the examination was commenced (apparently in 1872) for each year are as follows :—

	1872.*	1873.	1874.	1875.	REMARKS.
Chil scantlings "ballis" and pieces.	21,718	6,923	12,357	32,916	* Of 1872, Mr. Duff remarks that he could not spare a man for the work of examination alone, and so he thinks some rafts escaped inspection.
Other woods do. ...	14,848	21,473	12,923 956 Tun	43,390	
Bamboos ...	37,337	72,818	33,959	1,33,650	

RAVI DIVISION.

Work on the Ravi.

113. The fellings consisted of trees as follows :—

C. Deodara 350 (partly dead or dry) = 3,000 logs (not launched). Out of one of the small side steams, 906 logs were launched into the Suil (breakage 5 per cent). There were also in the forest from former years 4,852 (corrected for 4,843) logs. Total in forest on 1st April 1876, 6,946.

The high floods washed out about 2,000 waif logs: some of large size, one 50′ in length and 18′ in girth; these were marked.

117 deodar and pines (which in future should be separated) were felled by the Chumba State.

KALATOP.

114. The demand does not equal the anticipations of the working plan, perhaps the rates want lowering. 2,212 c. ft. of deodar and 2,149 of pines were cut, of which 998 c. ft. of deodar and 1,286 pines were sold. But there will be a demand for wood for the Dalhousie Church. The cuttings in Bakloh for Government works were only 13 trees.

115. On the river, very heavy floods occurred, carrying down large quantities of timber, and giving employment to large gangs of laborers.

The Transit Depôts received C. Deodara 5,538 logs and 7,651 pines. Of these came to Sale Depôt, C. Deodara 2,924 and 1,120 pines. Of the rest some were sold in the Transit Depôts; others in rafts had not reached the Sale Depôt yet.

Sale Depôt work.

116. The Sale Depôt work is represented thus in cubic feet:—

	Deodar.	Pines.			
Balance at beginning of year	32,375	20,603	=	52,978	cubic feet.
Receipts during the year	1,14,586	16,881	=	1,31,467	„
	1,46,961	37,484	=	1,84,445	cubic feet.
Issues ...	1,42,960,	32,695	=	1,75,655	„
Balance at close ...	4,001	4,789	=	8,790	cubic feet.

CHENAB DIVISION.

Chenab work.

117. Fellings of deodar trees took place as follows:—

Dry trees	...	...	1,844
P. Excelsa	...	...	248

It is said that the cubic contents were about 102·780 feet. Beside this a "few" walnuts, ash, and Pencil Cedar were felled and left to season. (The number must be reported). The breakages which must be carefully counted (and are not the least difficult to ascertain) are said to be 10 per cent.

Launching without slides.

Chenab Forests are all in precipitous places, but officers are too much accustomed to be contented with launching without slides, in the old native fashion, on the vague idea that a slide would "cost too much," which may, it is feared, mean they do not know how to make it. The trees were axe felled and logged with a cross-saw.

It is said that 30 logs were sawn up into 782 sleepers. It is not known why this was done, as the sawing up of sleepers has been prohibited long ago, and what sized sleepers is not said. Perhaps these logs could not be got out otherwise.

118. *River Work.*—1,137 waif logs were caught and marked, of which 185 were Government cross-sawn logs which had got into the river before marking.

Quality of timber, &c.

119. The quality of the timber was not good, being small, knotty and much cracked. The prevailing lengths were from 7 to 12 feet; average contents 10 feet. Short lengths alone, it is said, can be launched owing to the precipitous nature of the Chenab banks. In another paragraph Mr. Forrest gives the average cubic contents of logs *sold* at 9·25 cubic feet.

Sale Depôt work.

120. There are two Depôts for sale at Jheekur (Wazirabad) and Multan; the latter temporary at present, but seems likely to be permanently required. The Jheekur site is being gradually carried away, the river current having set in upon it. Sloping the banks has been tried without success. Mr. Forrest does not say whether he has consulted an Engineer on the subject, and whether a "bund" or spur or other protective work could be made use of. This should be seen to.

121. The sale of stock (inferior) by auction appear as follows:—

		Logs.		C. F.	Average.
Inferior wood	by auction at Multan	5,474 C. D.	=	29,671	1-7-1 a log.
		2,941 P.	=	18,555	
	2nd auction	1,061 C. D.	=	7,894	2-6-11 a log.
		1,017 P.	=	9,440	
	3rd auction (Jheekur)	9,281 C. D.	=	85,354	2-9-8 a log.
		4,356 P.	=	48,737	

At Multan, also 8,195 c. ft. Deodar were sold at full rates, and 10,173 cubic feet of Pines.

At Jheekur (by the Punjab Northern State Railway) 2,032 logs = 28,484 c. ft., were taken, and 701 first class and 702 second class sleepers @ Rs. 4 and 2 respectively.

The whole account given by Mr. Forrest of his Depôt work is rather confused and unintelligible. He says the total logs got rid of is 28,001 = 2,59,055 cubic feet, which appears to include all deliveries, auctions, &c.

Multan Depôt.

122. I have no objection to a permanent Depôt at Multan, when a Forest Ranger is available for the charge. Captain Atkinson being suspended, we are an officer short on this river, as elsewhere.

Jhelum Division.

123. No felling, logging or launching was done for the plain market. 4,157 logs remained in the Forest. 2,180 trees were felled for local demand, realizing 7,086 rupees, of which the proportion paid to various villages was 3,370 rupees. The list is as follows:—

Abstract of Trees felled by Permits in the Hazara Forests, from 1st April 1875 to 31st March 1876.

Description.	No.	Rate.	Total amount.			Zemindar's share.			Remarks.
Diar or Deodar, above 6 ft. in girth ...	50	10 0	500	...	...	250	...	...	
Sum (ash), under 6 ft. in girth ...	1	10/0	10	...	...	5	...	...	
Walnuts (*Juglans Regia*), above 6 ft. girth	8	10/0	80	...	...	40	...	...	
Barungi (oak), above 6 ft. in girth ...	46	8/0	368	...	...	184	...	...	
Do. (do.) under 6 ft. in girth ...	23	4/0	92	...	...	46	...	...	
Do. (do) dry, standing ...	3	4/0	12	...	...	1	8	...	/8/ a tree.
Kain (Elm), above 6 ft. in girth ...	13	6/0	78	...	...	39	.	...	
Kangar (*Pistacia Integerima*) ...	1	6/0	6	...	...	3	...	...	
Biar (*Pinus Excelsa*), above 6 ft. in girth	370	6/0	2,220	...	...	1,095	...	...	
Biar (do.) dry, standing ...	118	3/0	354	...	...	44	4	...	/6/ a tree.
Chil (*Pinus Longifolia*), above 6 ft. in girth	46	5/0	230	...	...	115	...	...	
Do. do. do. do. ...	143	3/0	429	...	...	214	8	...	
Do. do. dry, standing ...	6	2/8	15	..	...	1	14	...	/5/ a tree.
Do. do. do. ...	2	1/8	3	...	...	...	6	...	/3/ a tree.
Drava (*Cedrela Serrata*), above 6 ft. girth	11	8/0	88	...	...	44	...	...	
Do. (do.) under 6 ft. in girth	2	4/0	8	...	...	4	...	...	
Birmi (*Taxus Baccata*) under 6 ft. ...	1	3 0	3	...	...	1	8	...	
Palndar (*Picea Webbiana*), above 6 ft. ...	846	2/0	1,692	...	...	846	...	...	
Do. dry, standing ...	35	1/0	35	...	...	4	6	...	/2/ a tree.
Bankhor (*Osculus Indica*), above 6 ft. ...	87	2/0	174	...	...	87	...	...	
Kalakat (*Prunus Padus*) do. ..	180	2/0	360	...	...	180	...	...	
Rhin (Hoary Oak) do. ...	124	2 0	248	...	...	124	...	...	
Trekan (Maple) do. ...	25	2/0	50	...	...	25	...	...	
Do. dry, standing ...	1	1 0	1	...	...	...	2	...	/2/ a tree.
Batkar (*Celtis*) do. ...	26	1/0	26	..	...	13	...	...	
Barin (Oak) do. ...	6	/8/	3	...	...	1	8	...	
Pasair (*Fathergilla Involucrata*) ...	6	/4/	1	8	...	...	12	...	
Total ...	...	...	7,086	8	...	3,370	12	...	

124. Great care however is needed in repressing demands for trees cut on this system. People ask for "trees" without having the vaguest idea what the cubic contents are; and it has not unfrequently occurred that *several trees* of P. Webbiana, &c., are asked for to build a single out-house! Notice has been given that this system will now cease, and a proper timber depôt for the sale of scantling will be opened at Dungagalli, or in the immediate neighbourhood, during the year 1877.

Evil of the Permit system.

River and Depôt work.

125. The Depôt work shows thus :—

		Logs.	*Sleepers.*
Stock at opening		15,092	140
Receipts		2,071	...
Total,	...	17,163	140
Sold,	...	8,470 logs = 1,88,701 c. ft.	
Balance in stock,	...	8,693 „ + 140 = 1,60,622 c. ft.	

126. The average contents of Deodar logs were 24·35 cubic feet, and of Pines 18·10 c. ft. It is impossible to give a percentage of receipts of different year's felling, as no cutting was done since 1869, and all are old or drift and dry wood marked, as this came into the river Kaghan, from the Kaghan Forests. A small quantity is waif caught in the Jhelum, but most of the waif is taken by the Kashmeer people, who make no secret that they are instructed to collect it by the authorities. It is impossible to control these people in foreign territory, and therefore it has been proposed to surrender waif and receive a cash sum per annum in lieu. This will be satisfactory, as with our greatly improved management in Kaghan, very little unmarked timber from any of our forests ought to get into the Jhelum at all. On the Kaghan river of course there are no waif rights.

Quality of timber.

Waif taken by Kashmir.

127. The following remarks are made regarding the value of the timber. The classification by length was probably well intended, but it showed a want of study of the Depôt Rules, which as it has received a remedy need not be further remarked on. I must say, on the other hand, that while a tendency to over-rate wood must be avoided, it is a fault more on the right side, than indiscriminate condemning of quantities to the 2nd class, and selling off by auction what might have been sold at full rates.

Classification of timber.

The general condition of the timber was bad, in consequence of having been kept so long in the depôt. Several good offers were made, but refused, because they were below the Government rates, unfortunately the timber had been classified according to lengths, irrespective of quality, and sanction could not be obtained to transfer the indifferent logs from the 1st class into the 2nd. The result of this was that purchasers declined to pay the Government rate for 1st class timber, while it was really very inferior 2nd class. Consequently a very great portion, which might have been sold in 1874 to great advantage, has been sold in 1875 as firewood.

128. In consequence of the frauds which occurred, the system of rafting has thoroughly been revised and the system of Transit Depôt with timber invoices or "challans" started. A great deal of the fraud was due to the utterly inefficient establishment maintained on the supposition of the economy, and the putting in charge of the

Thorough revision of the river working.

Depôt, a Forest Ranger so incapable as Mr. Monteath, who appears to have allowed rafts to be stolen in broad day-light underneath the windows of the house where he was sitting.

Uniform information wanted.

129. On the subject of this section generally, I regret to observe the same variety of information as was complained of some years ago. It is impossible for me to correct this now. But next report must be very different.

The Sutlej takes no notice of the percentage of receipts at Depôt of different years' timber, nor does the Ravi. The Chenab states that such a table accompanies the report, but I cannot find it. None is received from the Beas. The absence of it (or rather that all timber must be drift and old wood from the forest) is explained for Jhelum.

The percentage of breakages in launching is not uniformly given ; and the number of waif logs marked or collected is also not uniformly stated.

Table of five years' Government fellings

130. The fellings of the past five years may thus be tabulated for State Forests (exclusive of local grants) :—

Divisions.	1871.	1872.	1873.	1874.	1875.
Sutlej.	...	...	D 186	D. 120	D. 800
Beas.	D. 70	D. 1,975	D. 902	D. 120	D. 20 (dead) P. L. 250 Walnut 50 Maple 50
Ravi.	A. S. 200	D 39 (dead) P. E. 24	Kalatop { D 3,258 c. ft. A. S 1,552 c. ft P. L. 278 trees.	Kalatop { D. 2,261 c ft. A. S. 8,354 c. ft P. L. ..... 14 D. .....250 P. E. 830	D 350 (dead) Kalatop { D 2,212 c ft. 2,149 Pines.
Chenab.	D. a few dead	D. 861 dead	D. 952 dead	D. 1,008 P. E. 743 A. S. 93	D. (1,844) dead. P. E. 248
Jhelam.	D. 414 dead	D. 448 P. E. 20	P. E. 229 P. I. 79 P. W. 112 Others 646	P. E 378 P. L. 139 P. W. 810 D. 1 Others 914	P E 448 (dead 118). P. L 197 P. W 881 D 50 Others 564
Rawulpindi.	Not stated.	Not stated	Not stated.	P. L. 990 Others 770	P. L 763 Others 914

131. The return of floods has not been sent from the Beas. The other rivers show as follows :—

Dates.	Sutlej (Rupur) Canal Gauge.	Ravi (Madhopur) Canal Gauge.	Chenab Railway Gauge.	Jhelum Railway Gauge.
April 15th* ...	...	...	...	3′
July 11th ...	9′45	...	...	...
„ 12th ...	...	13′5″	...	...
„ 13th ...	...	...	...	3′3″
„ 14th ...	...	14′3″	...	...
„ 15th ...	...	14′8″	...	...
„ 16th ...	10′35	...	...	...
„ 17th ...	...	...	...	5′
„ 21st ...	...	15′	...	...
„ 22nd ...	10′50	...	...	...
„ 25th ...	...	16′1″	...	...
„ 26th ...	...	...	...	5′2″
„ 28th ...	...	14′6″	...	...
„ 29th ...	...	...	...	4′6″
„ 30th ...	12′70	...	17′	...
August 2nd ...	14′70	15′9″	...	3′
„ 4th ...	12′35	...	...	...
„ 5th ...	13′85	...	...	...
„ 7th ...	...	...	...	6′6″
„ 10th ...	...	16′	17′	2′9″
„ 13th ...	11′0	...	...	...
„ 14th ...	12′45	...	...	3′6″
„ 18th ...	...	12′5″	...	...
Septr. 1st ...	...	...	...	5′
„ 10th ...	...	18′8″	...	...
„ 11th ...	12′27	18′8″	...	...
„ 16th ...	...	...	...	7′4″
„ 17th ...	...	...	...	5′8″
„ 20th ...	...	...	...	6′
„ 25th ...	...	12′	...	...
„ 26th ...	...	12′	...	...
„ 28th ...	...	...	...	6′

Note.—A flood occurred on the Jhelum of 3 feet, lasting 10 hours, on 25th March 1876.

Fuel Reserve Central Division.

132. The Statement which follows, shows the fuel and charcoal production of this Division :—

District.	Name of Rukh.	Total area of Rukh.	Total area cleared and closed to grazing during the rotation.	Fuel sold and measured up c. ft. 1875-76.	To whom sold.	Charcoal.		Remarks.
						Chil.	Hard wood.	
						Mds.	Mds.	
Lahore ...	Mahdevi ...	15,673	5,250	(a) 34,528	Bussu Contractor, Northern State Railway,	15,838	44,280	(a) Not all carted away from Rukh.
Do. ...	Baikunta ...	4,387	2,187	23,504	Bussu Contratctor, for private sale.			
Do ...	Do. ...	...	...	4,000	Burkut Ali do.			
Do. ...	Hursa Ghuman	(b) 7,646	7,646	22,050	Mela Ram Contractor, for S., P. and D. Railway			(b) Felling has been going on for some 4 years in this Rukh, and is now cleared with the exception of Pilu.
Do. ...	Kot Lakpat ...	3,348	2,000	16,276	Bussu for Bazar sale.			
Montgomery ...	No. 15 ...	31,648	21,425	(c) 267,941	Mela Ram for S., P. and D. Railway			(c) There is still a large amount of fuel remaining on the ground not yet carted away, nor measured up.
Multan ...	Vanohi ...	1,222	(d) 500	75,000	Multan Commissariat			(d) Felling in Vanohi is being going on for 4 years.
Mozuffurgarh...	Khudai ...	5,009	150	19,425	I. V. S. Railway.			
	Total ...	68,933	39,158	462,724				

132 A. We had 11,35,431 acres under grazing. An area, which except so far as it excludes forest land in which grazing is safe and proper, is only useful to us as enabling an income to be made; and thus again is only useful as long as it is persistently maintained that an income *must be made* out of everything; and it is forgotten that no rukh that has once made its yield of fuel, *can* consistently with its reproduction and improvement yield any revenue at all, for at least 5 years, *viz.*, till grass cutting can be allowed.

Area open to grazing.

Minor products consist of "Kankar" (for lime and road metal), dye stuff and galls to a small extent, soda and Munj grass (*Saccharrum.*)

Fuel Reserve Northern Division.

133. In the unsettled state of rights in this Division, it is not to be regretted that no large sales of fuel took place. All individuals get supplies free, *and large towns are somehow supplied without* any *demand on Government Rukhs*, a fact which speaks a rather strong commentary on the supposition that the people are badly off for fuel, or that they really require the concessions made to them in 1873. Some 5,988 maunds of brushwood were sold to the N. S. Railway @ Rs. 6-2-1 per 100 maunds.

Northern Rukhs—fuelsupply.

Rawulpindi Division.

134. The fellings of trees standing are given in the table under para 130.

Fuel from Rawulpindi.

The sales of fuel and pieces estimated still by weight are as follows:—

A dry and fallen wood.

			Mds.	Srs.
Coolie	loads @ ¾ maunds each	.. ..	60,261	30
"Banghy"	ditto @ 1½ „	.. ..	5,914	20
Donkey	ditto @ 1½ „	.. ..	46,074	0
Mule	ditto @ 3½ „	.. ..	3,185	0
Bullock	ditto @ 4 „	.. ..	1,98,608	0
Camel	ditto @ 6 „	.. ..	14,208	0
Cart	ditto @ 15 „	.. ..	105	0
102 stacks for Charcoal @ 120 maunds		.. ..	21,240	0
		Total,	3,40,596	10

B. Green wood.

4,035 roofing pieces, about	.. ...	..	61	0
12 "Surkhi" Kilns @ 100 maunds	..	..	1,200	0
371 Lime Kilns @ 200 (out of 100)	..	..	74,100	0
1,658 Plough pieces @ 5 seers	..	..	207	10
450 Stacks to Contractors @ 90 maunds	..	..	40,500	0
94 ditto to Murree Brewery @ 120	..	..	11,280	0
		Total,	1,27,348	10
	Grand Total,	...	4,67,944	20

The amount for last year was 10,12,500 maunds = 2,25,000 c. ft. (report for 1874. para. 125). This included a large P. W. D. demand, total = 5,20,425 maunds.

135. Assuming a nominal demand of 400,000 maunds from the plain forests alone, it is clear that with our 1,22,000 acres now left, and fixing the mininum revolution at 15 years, we should have an annual cutting of about 8,000 acres which must yield 50 maunds per acre. How absurd then and utterly contradicted by facts is the statement that this Department has more than it needs in Rawulpindi.

Conclusion as to area required to grow fuel in Rawulpindi.

50 maunds per acre over the 1,22,000 acres is far beyond the actual stock, a portion of which is totally exhausted.

CHAPTER II.—GENERAL.

FINANCIAL RESULTS.

Gross surplus.

136. The Revenue shows a total excess of Rs. 3,51,515 10 2 as compared with the expenditure.

For the last five years the figures are:—

Year.	Expenditure.			Revenue.		
	Rs.	A.	P.	Rs.	A.	P.
1871	7,05,329	9	2	7,35,003	8	7
1872	7,95,942	14	3	6,52,994	11	0
1873	5,97,162	2	2	7,32,539	5	11
1874	6,46,479	12	4	8,34,874	0	7
1875	5,54,226	3	2	9,05,741	13	4

Net surplus.

137. The net surplus of the year by the form 28, which allows for the transactions of former years, and takes into consideration the altered value of stock, shows the net profit at Rs. 1,52,058.

The way this alteration of stock is valued is explained on the statement

Cost of production of timber.

138. The form No. 27 is said to show the amount expended on each 100 cubic feet of timber, but in fact it shows how far each hundred cubic feet goes to meet the *total* forest expenditure on conservancy, planting, communications, buildings, everything in short, except Direction.

It is doubtful whether these results are of much value, whereas if the figures were really confined to the cost of production of 100 feet of timber, the form would be much more valuable. 'Inclusive and exclusive of seignorage' should be shown, so as to enable a comparison with rivers, where no seignorage is payable, to be made.

The following tables show the figures for 5 years, but last year was defective as omitting cubic contents for timber other than logs :—

S = Sleepers ; other figures refer to logs.

Year.	Sutlej.	Beas.	Ravi.	Chenab.	Jhelum.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1871–72 ...	95 0 0	44 4 1	59 8 1	13 9 8	37 4 3
1872–73 ...	181 0 0	118 0 0	53 0 0	67 0 0	83 0 0
1873–74 ...	68 37 S. 114·08	27·21 S. 96·00	56·10 S. 71·50	29·30 S. 31·94	45·70
1874–75 ...	not	shown.			
1875–76 ...	31·25	41·37	51·42	25·39	76 0

The *realizations* on account of 100 cubic feet are :—

Year.	Sutlej.	Beas.	Ravi.	Chenab.	Jhelum.
	Rs. A. P.	Rs A P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1871–72 ...	52 1 0	56 9 2	83 15 0	68 11 0	57 6 8
1872–73 ..	59 03	88 42	73·73	143·32	98·67
1873–74 ...	42 0 10 S. 38 15 7	74 8 1 S. 149 2 3	43 9 7 S. 41 1 0	30 12 4 S. 123 2 10	19 12 9
1874–75 ...	49 51	65·33	77 84	63 55	58 59
1875–76 ...	55·85 S. 130·75	60 95 S. 97 71	53·17 S. 49·68	35 26 S. 225·63	56 99

Taking the average of the 4 years, we have for timber in log only :—

Division.	Expended.	Received.	Profit.	Loss.	REMARKS.
Sutlej ...	122·42	94·66	...	27·76	Receipts from sleepers, all of which are not included, vitiate this to some extent.
Beas ...	81·70	131·28	50·13	..	
Ravi ...	72·88	86·28	13·40	...	
Chenab ...	41·78	156·72	114·94	...	
Jhelum ...	60·48	58 22	...	2·26	This river pays better than any, scarcely any fellings having taken place during these years, still the old and waif timber received nearly paid for Divisional expenses.

The average above is useful, because the expenses for any one year do not refer to more than a part of the timber which has come down in that year.

Grazing Revenue.

139. The grazing revenue has been for the last five years :—

Year.	Fuel Reserve Central.	Fuel Reserve Northern.	Plantations.	Jhelum and Rawulpindi.	Total of all Divisions.
	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
1871–2	1,12,702 4 0	Division not formed.	13,618 9 6	5,262 2 11	1,32,110 13 1
1872–3	1,24,852 7 1	..	8,959 11 10	4,027 0 1	1,39,831 3 9
1873–4	1,35,476 0 2	..	7,526 12 6	9,047 5 5	1,54,124 1 3
1874–5	1,19,625 5 11	45,626 1 6	6,024 15 9	7,790 6 6	1,88,466 1 6
1875–6	97,309 12 11	46,906 14 6	6,556 7 0	J. 3,653 15 6 R. 3,623 5 9	1,62,487 13 7

The items are shown in total and in detail for the main divisions having such income as a chief item ; the others are too small to make it worth while showing them in detail.

Cause of variation.

The varieties in the latter years are due to changes of division and to diminutions of area, the tendency having been to reduce the area under the Forest Department. This has the effect of showing less grazing revenue from lands directly under our charge for planting, improving, &c., but the difference goes to Miscellaneous Land Revenue.

140. It has now been recognized by the Local Government, and by the Government of India, that the large area of Rukh lands under the Fuel Reserve Divisions and in the Rawulpindi Division should be reduced, so as to leave only those lands under charge of the Forest Department which are really calculated to yield fuel and to be planted up and improved.

Effect of reduction of area.

This is very desirable, and the work of selection of lands for this purpose is in progress. Already the land in the Rawulpindi Division has been largely reduced, and has been so, to some extent, in the Fuel Reserve Divisions.

141. While the reduction of area when completed will enable us to effect a considerable economy in subordinate establishments, it is to be borne in mind that at the same time the reduction of grazing dues on the area in our charge will be large, because that area will be mostly closed for reproduction; and fencing and other works of improvements, which will yield a good return a few years hence, will be undertaken.

142. It is therefore highly important that Government should recognize the principle that the proceeds from lands *not* under strict conservancy ought to be taken into consideration, as an income against which the expenses of strictly conserved lands may legitimately be set. I may be permitted to ask particular orders on this point.

Revenue from lands not strictly reserved to be taken into consideration.

In the transition state this Department pays in some cases for establishment, the income going to Land Revenue heads.

Amount of income not thus credited to Forest heads.

143. It is therefore important to observe that the income from Rukh lands *not* credited to Forest Revenue from grass and wood has been for the last five years as follows:—

Year.	Grazing dues.		Sale proceeds of wood from Rukhs and Forests.	Total.
	By enumeration of cattle.	By leases.		
1871–72	1,33,354	3,14,587	50,070	4,98,011
1872–73	1,29,545	3,06,779	59,558	4,95,882
1873–74	1,32,695	3,16,216	51,404	5,00,315
1874–75	40,739	4,07,860	59,683	5,08,282
1875–76	79,485	3,48,235	50,812	4,78,532
Total ...	5,15,818	16,93,677	2,71,527	24,81,022

Details of Rukh Revenue—sources.

144. It will now be interesting to examine more in detail the revenue derived from the Rukhs in charge of the Forest Department.

The income (from sources other than wood sales) is shown by Mr. Browne in an unnecessarily gigantic table, which may be condensed into the following,

and which Mr. Browne will *keep up* in future from year to year. The figures show the total recovered *and due* for the year, and are therefore in excess of the realized revenue shown in Form 21. The total of fuel and charcoal (19,174 + 55 596 Ch.) = 74,710 Rs. The total of grazing is Rs. 1,06,774, the other minor items give Rs. 3,013 ; grand total, Rs. 1,84,497.

District.	Grazing.		Sale of Fuel.		Cultivation		Kunkur.		Munj.		Charcoal.		Sujji or Soda.		Mulla Patra.	
	1874.	1875.	1874.	1875.	1874	1875.	1874.	1875.	1874	1875.	1874.	1875.	1874.	1875	1874.	1875.
Lahore ...	21,604	21,287	27,892	7,188	1,995	332	213	80	1,131	920	Chil. 21,107 / 28,016	Do 23.112 / 32,124	...	...	140	257
Amritsar ...	923	972	...	42	412	327	85	..	...	...	...	...	...	...	.	46
Gujranwalla ...	43,083	40 965	...	...	...	...	...	..	..	..	...	...	...	...	...	...
Montgomery ...	40,71 6	39,240	...	5,014	...	75	...	..	..	...	...	...	..	...	...	...
Multan ...	4,545	4 310	8,555	5,698	...	9	...	...	..	90	...	11	595	683	...	...
Mozufferghur ...	...	...	1,034	1,057	..	118	...	...	440	52	...	...	...	...	...	...
Dera Ghazi Khan	...	...	...	14	...	...	...	...	...	25	...	...	...	...	...	...
Gurdaspur ...	...	...	...	185	..	...	...	...	...	...	2,574	288	...	...	...	...

Remarks on this detail.

145. In the first place Mr. Browne will be requested rigidly to prohibit cutting the "Malla patra" always without exception. In the next, the only excuse for continuing cultivation is that it may be well to get the revenue until the land actually comes to its turn to be taken in hand for forest work. On the other hand, it has a tendency to fix the idea that these lands are permanently culturable.

My own wish is that Mr. Browne should refuse all cultivation absolutely in all Rukhs decently wooded, and which he knows he *will keep* as forests. If the plot asked for in such forests appears to be cultivated as of *right*, he must refer to the Deputy Commissioner, either to oust the cultivator, buy him out, or give up part of the Rukh. Mr. Browne's particular attention is directed to this.

Cost of production of fuel.

146. The cost of the production of fuel has been remarked on by the Government of India. Though I have not received the full report called for, I am in a position to give an explanation.

It is to be recollected that (with the exception of Rawulpindi to some extent only) the only demand for our fuel is from the Railways and other great works.

Rights of free fuel and areas of common land are so abundant, that there is only a demand too trifling to be noted, from petty traders, towns villages, &c.

The chief consumers during the years 1871-72 and 72-73 have been the Northern State Railway.

The wood for them has had to be fetched from long distances, and the terms being extremely exacting, often causing great loss by dryage, destruction by insects, and so forth, it has resulted in this, that the net return over and above the actual cost of production (of which carriage is the main item) has been a very small royalty only.

This also was the case in Rawulpindi during the brief time that direct production was attempted there, the cost of cutting and carriage was Rs. 23 a 100 maunds, and the price at which sale was possible was Rs. 28; in other words, a royalty of Rs. 5 per 100 maunds was all that was realized. This seems to me to explain the subject.

The figures in the early years include the expenditure on getting down Chil wood, part of which owing to the failure of the contractor have not yet been recovered (the case is still under arbitration). The complete discussion of the matter must, however, await Mr. Browne's report.

Result of Plantation work.

147. The Plantation Division demands notice.

The figures are :—

Year.	Expenditure A.			Expenditure B.			Total.			Income from all sources.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P			
1871-72.	76,223	15	7	31,646	12	3	1,07,870	11	10	20,266	10	4
1872-73.	72,183	8	11	35,080	8	5	1,07,262	9	4	20,604	5	3
1873-74.	50,635	11	9	28,883	9	11	79,519	5	8	13,438	1	8
1874-75.	43,138	15	8	2,03,071	13	11	63,446	13	7	14,617	9	1
1875-76.	44,234	11	9	16,719	5	1	60,954	0	10	25,913	10	0

It is to be borne in mind that during the years 1874 and 1875, we have contributed Rs. 11,126 to the work of planting and draining a swamp at Peshawur, a work from which we derive no income whatever.

The somewhat higher income in the years 1871 and 72 was due to receipts from considerable areas of land leased for cultivation, preparatory to its planting or being still under grass.

The year 1875 under report shows the largest income yet attained, and the yield of thinnings has already been discussed. It is found that at present small branches at Chunga Manga are not saleable, while they are nearer Lahore.

I am not satisfied however till a fair experiment has been made that it would not pay to charter a whole train in a slack season, and having fashioned

the small wood into faggots, bring a large stock to Lahore, to be deposited at a depôt (temporarily obtained near the terminus), and sold by auction.

Costs of maintenance and extension

148. Mr. Minniken has furnished the following table of the cost of plantations divided into maintenance and extension The total expenditure, Rs. 49,115-10-11, is in excess of that shown in the Accountant General's corrected Form No. 21, which shows Rs. 44,234-11-9.

The *total* expenditure (including B heads) is the same as shown by Mr Minniken and the Accountant-General, *viz*:—

	Rs.	A.	P		*Accountant-General.* Rs.	A.	P.
A. heads ..	49,115	10	11	A. heads ..	44,234	11	9
B. heads ..	11,838	5	11	B. heads ...	16,719	5	1
TOTAL ..	60,954	0	10	TOTAL ..	60,954	0	10

The difference is clearly due to some establishment being charged by Mr Minniken to works which the Accountant-General has transferred to B.

But even accepting the larger figure, which is so far *against* the favorableness of the result, it appears that the income of the Plantations now covers (within a few rupees) the cost of their maintenance, exclusive of permanent establishments:—

PLANTATIONS.	Area in 1874-75.	Area added in 1875-76.	Cost of maintenance during 1875-76.			Cost of extension during 1875-76.			TOTAL.		
Chunga Manga ...	7,212	960	24,115	15	3	10,132	6	2	34,248	5	5
Ravi ..	600	...	25	7	3	...	...	..	25	7	3
Khanwah ...	360	...	43	8	9	...	...	..	43	8	9
Jugian, Shahdera and Mahmud Buti ...	827	389	1,242	5	8	1,471	13	3	2,714	2	11
Jhoke and Sadhanwali ...	990½	197	902	1	1	1,208	10	9	2,110	11	10
Nag ...	412	...	743	13	9	...	...	..	743	13	9
Jalandhar ...	50½	...	61	7	...	...	...	...	61	7	...
Phillour ...	239	...	134	14	6	...	..	...	134	14	6
Ludhiana ...	190	...	327	2	9	...	...	...	327	2	9
Jagadri ...	183½	...	216	7	6	...	...	...	216	7	6
Umballa Nursery ..	1	...	7	6	...	...	...	...	7	6	...
Kathala ..	160	...	...	...	...	3,358	13	8	3,358	13	8
Wazirabad ...	393	...	67	14	6	...	...	...	67	14	6
Kikranwali ...	576	...	64	12	6	...	...	...	64	12	6
Peshawur ...	580	...	...	...	...	3,000	..	..	3,000	...	...
Carob Plantation ...	...	37	...	...	...	1,990	10	7	1,990	10	7
	12,774½	1,583	27,953	4	6	21,162	6	5	49,115	10	11

Remarks on B. heads

149. The B. heads need only a few remarks. The charges for salaries of superior establishment necessarily vary according as the Conservator is of one grade or the other. The imperfect

staff during the year has caused the expenditure to appear low ; this defect is in the course of being remedied.

Travelling allowances.

Travelling allowances in proportion to salary are high as compared with other provinces. They amount to about a fourth in the Panjab, while in other provinces they vary from one-sixth to one-eighth. This is however to a great extent due to the number of low grade officers who get four-tenths of their salary, and whose joint allowances consequently reach a higher figure in proportion to their salaries, than those of other grades. A number of officers, also, are on the move during the whole year; while some have their residence in the hill divisions, at a great distance from stations at which supplies are obtainable.

I have been recently enquiring into the whole subject with a view to keep the charges moderate without doing injustice to individuals.

New rule fixing 30 miles as a limit for journey entitling to mileage.

150. The new rule about 30 miles being the limit for drawing mileage has worked extremely badly. This rule which is believed to have originated with some special case (unknown) presses hardly on many officers. While the Conservator can always check unnecessary journies, he cannot possibly check those which might advantageously have been made, but are not, owing to officers shirking the journey from the expense. The rule is felt by all classes rather as a slur on their honesty, inflicted on the whole service because some one person offended It is a rule moreover which places the forester at a disadvantage as compared with any other service under Government.

Comparison of financial results with other provinces.

151. In conclusion, I would remark that of late comparisons have been made between the financial results of the different provinces. Before this can be fairly done, it must be remembered that while other provinces (with rare exceptions) have no prime cost or charge to pay for the material which, when extracted and disposed of, produces their revenue, the Panjab has to pay a prime cost on the shape of lease money or seignorage from all the produce of the Jhelum, Ravi, Chenab, and Sutlej.

Exception charges borne by the Panjab

This charge (which is liable to increase according to the number of fellings) amounted in 1875 to Rs. 28,350. This at least has to be deducted from our expenditure (and all such sums where they exist elsewhere) before a comparison can be made.

Exceptional demands on our funds.

152. Nor do I think it likely that any other provinces have so many free grants out of their produce, or undertake such large works from which they only will derive profit in future.

Of this nature is the Rs. 3,000 spent in Peshawur during the year.

It will be found that leases, seignorage, &c., and the value of free grants do not come to less than Rs. 32,000 annually.

153. Few other provinces also have such large amounts which ought to be available as a set off against Forest expenditure, and which are not credited to a Forest head. (*Vide* para. 143.)

SECTION II.—GENERAL REMARKS.

Unreserved Forest.

154. I only allude to these to remove certain misconceptions. In the forests of the plains, all lands are either Government reserved or are made over as commom lands without control. But of the former it is true that the Department manages some and the District the rest. The Rukhs under District management may therefore be called "Unreserved Forest."

Nature of unreserved forest in the plains.

In the hills, forests are either leased or Government. The leased forests of *Chumba* (when the Government demarcation is complete) will have the remaining area of non-demarcated forests unreserved, but they are entirely under the control of the Chumba State.

And in the hills.

The leased Forests of Basahir are practically all under Government and are all reserved; but the Government Officer has since 1865 allowed certain privileges in the non-deodar bearing portions of his forest. but this does not constitute them "unreserved" We retain control over the whole, and as soon as it is recognized that deodar is not the only valuable wood, and that the supply of timber is only *one* of the objects which the care of forests in Hill Districts comprises, we shall shall find a large increase of the estimated 20,000,000 acres, which at present comprise the actual deodar plots of Basahir.

The statement therefore which has been kept up of 100 square miles of unreserved forest in Basahir rests on no foundation.

For other hill forests, it seems probable, that the whole forest area within a certain line will be reserved on the Beas; with the rest we shall have nothing to do; it will then be called unreserved or village forest.

In Kangra, the small plots reserved, do at present leave a large area of village or unreserved forest.

In Hazara, there are also Government reserves, and large areas of unreserved forest properly so called. But it is now under consideration to put these under some sort of care to ensure their maintenance on the ground which has hitherto been imperfectly recognized, that in the hills climatic considerations, and the "regime des eaux" or considerations based on the action of rain, torrents, erosion, and water supply, prohibit the idea that mere blocks of *timber yielding* forest form the *ne plus ultra* of forest conservancy.

155. The unreserved forest area therefore only be shown for Chumba (at present unknown), Kulu, Kangra and Hazara.

Some Officers (including Ravi and Plantation Divisions) have supposed that because (under local provisions of law, or by existence of rights) a portion of the reserved area under State control is burdened with rights or privileges, that therefore the area so burdened should be shown as unreserved. This is an error.

156. The only estimate of unreserves that can be given is as follows. With the management of this area the Forest Department is not concerned. It

has the rights of cutting under existing rules, in unreserve, in Hazara and Kangra :—

Forest Divisions.	Area in 1874.	Added.	Excluded.	Total in 1875.
Beas Division (Kangra)	Sqr. miles. 179·42	Sqr. miles. ·09	Sqr. miles. ...	Square miles. 179·51
Jhelum (Hazara)	1906·35	...	...	1906·35
Fuel Reserve Central.	.....	.....	.....	Amritsur. Lahore. Montgomery, 17,00,000 acres. Gujranwalla. Jhung. Multan. Muzuffurghur. Dera Ismail Khan. Dera Ghazi Khan. Delhi Division.
Fuel Reserve Northern.	.....	.....	.....	Jhelum, 41,009 acres. Shahpur, 5,79,224 „ Gujrat.
Rawulpindi.	.....	.....	.....	Class III Rukhs, 36,687 Do. II do. 1,23,627 250 sqr. miles =1,60,314

Forest Officers will kindly bear these remarks in mind, and will be able to correct this table considerably.

B. H. BADEN POWELL,

Conservator of Forests, Punjab.

NO 11.

FOREST DEPARTMENT, PANJAB.

Account of trees felled, &c., during 1875-76.

DIVISION.	Logs on hand at commencement of year.	Kind of wood and number of trees felled during the year.	Logs obtained during the year.	Total.	Launched.	Remained in the Forest.
Sutlej	274 2,554 left by Brassey & Co. 2,962 Sleepers	Deodar 800 trees	5,000 (800 trees.) 9,199 W. fall. 1,326 Pine „ ...	18,354 ... 2,962	18,354 ... 2,962	
Beas	... 3,462 (Scantlings).	Deodar 20 Walnut 50 Maple 50 *P. Longifolia* 250 ...	78 300 250 1,854 ...	78 300 250 1,854 3,462	78 1,854	300 250
Ravi	4,447 logs	Deodar 350 Walnut 15	2,850 42	7,297 42	1,807 42	4,490
Chenab	13,069 Deodar logs.	Dry trees { Deodar 1,844 P. Excelsa 248 }	From trees 8,565 W. fall 8,679 }	30,313	20,663	9,605 248 P. Excelsa unlogged.
Jhelum	4,157	...	...	4,157	...	4,157

B. H. BADEN POWELL,

Conservator of Forests, Punjab.

NO

FOREST DEPART

Conservator's Abstract Book of Sum

NAMES OF BUDGET HEADS.	EXPENDITURE IN CONSER														
	April.			May.			June.			July.			August.		
A.—Conservancy and Working.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
I. COST OF TIMBER OPERATIONS.															
1. On wood brought to Depôt by Departmental Agency ...	8,719	8	1	3,985	13	2	11,002	3	11	5,783	10	7	18,628	8	9
(a). Timber and Bamboos ...	918	...	...	19,195	2	7	5,394	15	7	7,320	13	5	7,866	3	...
(b). Fire-wood and Charcoal ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(c). Sandal wood ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. On wood removed from the forests by Purchasers, License-holders, and Permit-holders ...															
(a). Timber and Bamboos ...	...	...	...	...	...	...	4	.	...	90	...	..	135	..	...
(b). Fire-wood and Charcoal ...	136	6	6	158	6	8	93	10	8	84	...	..	91	...	.
3. On confiscated, drift, and waif Timber	...	.	..	..	..	..	..	..	..	..	..	..	..	...	...
II. COST OF COLLECTING MINOR PRODUCE.															
1. Grazing and sale of grass ...	65	...	...	198	6	11	40	...	...	20	..	...	25	...	...
2. Other Forest produce ...	...	...	..	...	..	...	...	..	...	...	..	..	...	...	...
III. COST OF FOREST ORGANIZATION.															
1. Demarcation lines and boundary pillars or marks ...	25	...	...	92	2	...	82	9	9	535	...	..	708	..	..
2. Working Plans ...	...	...	...	421	5	5	175	3	9	217	0	11	1,077	4	9
3. Surveys ...	...	...	...	...	...	...	...	...	...	59	5	...	...	...	...
IV. COST OF THE TREATMENT AND CREATION OF FORESTS.															
1. Natural Forests ...															
(a). Protection from fire ...	...	...	...	...	...	...	33	15	..	..	...	...	...	...	...
(b). Fencing and enclosing ...	195	7	3	..	...	...	145	8	6	...	...	...	...	...	...
(c). Improvement and conservation ...	214	3	...	119	2	9	171	0	5	180	14	...	144	9	6
(d). "Reboisement" or restoration of denuded areas ...	45	...	..	56	0	3	35	..	..	207	2	...	...	..	...
2. Artificial Forests ...															
(a). Formation ...	3,010	4	3	804	3	...	1,371	15	11	3,060	14	3	3,589	8	10
(b). Protection from fire ...	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..
(c). Improvement and conservation ...	640	7	..	1,173	4	3	6,305	2	1	1,463	11	...	1,026	13	3
(d). Fencing and enclosing ...	...	...	...	75	4	3	5	10	...	124	..	..	...	...	...
V. RENT OF LEASED FORESTS	...	..	..	10,500	...	..	180	...	...	...	..	...	...	...	...
VI. COST OF COLLECTING DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VII. WORK OF UTILITY FOR THE DEVELOPMENT OF FORESTS.															
1. Roads and bridges ...	...	12	...	25	..	...	110	8	6	156	15	6	58	3	6
2. Buildings and Offices ...	135	9	...	766	9	...	135	2	6	230	6	5	127	14	3
3. Compensation for land taken up for Forest purposes, or for extinction of Forest rights ...	..	..	...	...	...	...	...	...		...	...	...	..	..	...
4. Other works ...	...	..	...	35	...	...	62	10	..	..	...	...	32	8	...
VIII. COST OF DEPARTMENTAL CATTLE.															
1. Purchase of stock ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Hire of stock ...	...	...	..	...	...	..	...	...	...	...	...	..	...	...	...
Carried over ...	14,135	9	1	37,605	12	3	25,349	4	7	19,533	13	1	33,510	9	10

20.

MENT, PUNJAB.

mary of Expenditure for 1875–76.

VANCY AND WORKING.

September.			October.			November.			December.			January.			February.			March.			Total.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
14,257	8	5	13,395	0	3	15,307	6	9	3,904	2	8	27,074	14	10	6,264	7	...	23,813	3	10	1,52,136	8	3
198	7	3	1,756	13	9	482	8	3	7,074	12	1	13,576	7	...	3,397	2	3	100	...	...	67,281	5	2
...	...	...	..	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
...	...	...	...	.	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	...	...	20	...	.	...	.	...	...	...	.	..	...	...	...	...	...	41	..	...	290	...	...
153	12	6	41	...	...	41	...	...	41	...	...	71	...	...	41	...	...	202	13	9	1,155	2	1
..	..	..	..	...	..	...	...	...	...	...	...	...	...	...	..	..	...	...	..	..	..	..	..
25	.	...	65	.	...	...	...	...	25	...	...	69	..	...	25	...	...	60	...	...	617	6	11
...	...	...	...	...	...	...	...	...	...	...	...	34	8	6	...	...	..	...	...	..	34	8	6
940	3	...	344	14	2	88	3	...	767	5	6	941	4	9	40	10	10	1,295	0	6	5,860	5	6
187	12	9	161	1	6	...	..	...	111	3	9	419	14	10	440	8	6	259	3	...	3,170	11	2
2	8	...	56	3	...	127	10	...	...	...	...	167	4	...	...	...	..	...	..	...	412	14	...
...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	..	33	15	..
89	8	6	...	.	...	27	...	..	...	...	...	385	7	...	...	...	...	66	11	...	909	13	3
367	12	...	113	8	...	60	13	6	46	8	...	214	6	...	1	...	...	529	13	..	2,163	10	2
113	...	...	365	14	..	58	4	...	616	1	10	140	2	6	35	...	..	103	3	...	1,774	11	7
1,440	11	9	262	9	6	176	6	...	49	15	...	39	8	...	491	12	6	1,408	14	9	15,736	11	9
...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	...	.	...	...	...
601	15	..	398	10	6	587	1	3	562	12	...	398	6	...	12,323	15	11	688	1	5	26,170	3	8
3	...	..	599	13	10	10	...	...	213	14	3	360	3	2	...	...	...	...	...	...	1,391	13	6
...	...	...	...	...	...	10,500	...	...	...	...	...	6,791	10	...	...	...	...	379	2	...	28,350	12	...
..	...	...	..	...	..	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	..	...
135	3	6	75	5	...	11	7	...	...	...	...	132	14	...	...	...	...	30	12	...	737	1	...
627	11	7	427	3	1	740	9	3	222	11	6	804	8	3	215	5	4	2,219	7	5	6,653	1	7
290	14	...	35	...	...	...	...	...	10	...	...	...	...	...	...	..	...	45	...	...	380	14	...
5	...	...	5	9	2	...	...	...	...	...	...	1	9	...	...	...	...	...	...	...	142	4	2
...	.	...	...	...	..	...	...	...	...	...	...	...	...	...	..	..	..	...	..	...	...	...	...
..	..	..	...	..	...	..	...	..	...	...	...	...	...	...	..	..	..	...	..	...	...	...	...
19,440	0	3	18,123	9	9	28,218	5	0	13,645	6	7	51,622	15	10	23,275	14	4	31,242	8	8	3,15,703	13	3

NO.

FOREST DEPART

Conservator's Abstract Book of Sum

NAMES OF BUDGET HEADS.	EXPENDITURE IN CONSER														
	April.			May.			June.			July.			August.		
	Rs.	A.	P.	Rs.	A.	P	Rs.	A.	P	Rs.	A.	P.	Rs	A	P.
Brought forward ...	14,135	9	1	37,605	12	3	25,349	4	7	19,533	13	1	33,510	9	10
A.—Conservancy and Working.															
VIII. COST OF DEPARTMENTAL CATTLE.															
3. Feed and keep of cattle ...	..	...	...	21	7	...	28	6	6	8	7	6	5	...	...
IX. COST OF DEPARTMENTAL PLANT AND TOOLS.															
1. For timber and wood operations ..	15	...	...	...	...	...	200	9	2	9	15	...	75	...	...
2. For other purposes ...	32	4	...	305	2	6	55	15	6	111	5	...	7	7	...
X. MISCELLANEOUS CHARGES.															
1. Refunds ...	24	3		34	...	..	...	...	...	...	...	...	...	...	...
2. Law charges ...	..	..		...	...	...	...	...	...	...	...	...	...	...	...
3. Other charges ..	..	...		...	...	...	4	2	...	...	...	..	...	13	...
TOTAL OF CONSERVANCY AND WORKING	14,207	0	1	37,966	5	9	25,638	5	9	19,663	8	7	33,598	13	10
B.—Establishments.															
I. SALARIES.															
1. Pay of Conservator ..	1,000	...	...	1,000	...	...	1,000	...	..	1,000	...	..	1,000	...	..
2. Pay of Control and Executive Officers	4,458	9	5	8,603	3	6	6,038	11	4	5,050	...	...	5,550	...	...
3. Protective Establishments ..	3,945	...	...	6,877	0	10	6,619	1	3	5,817	10	4	5,504	7	11
4. Office Ditto ..	1,228	8	9	1,605	...	...	1,445	15	6	1,449	4	...	1,495	5	1
5. Deputation and Special Allowances..	..	..	...	...	...	...	...	..	...	...	..	...	..	..	...
II. TRAVELLING ALLOWANCES.															
1. Conservator ...	300	8	..	188	13	...	65	8	...	126	...	...	186	...	...
2. Control and Executive Officers ..	1,088	11	3	2,836	8	6	1,803	9	1	2,768	10	11	2,119	6	6
3. Protective Establishment ..	366	9	...	603	15	8	593	12	11	873	0	3	629	7	11
4. Office Ditto ..	178	3	4	204	9	11	219	5	10	339	1	...	307	11	10
III. CONTINGENCIES.															
1. Stationery ..	170	13	...	214	15	1	135	2	6	51	9	6	72	7	6
2. Carriage of Tents, and Office Records	139	12	...	379	2	2	537	3	3	61	9	...	161	2	...
3. Pay of Police Guards ..	28	...	..	3	...	...	56	...	...	28	...	...	28	...	...
4. Sundries ..	550	15	4	722	8	3	465	8	10	377	7	3	628	14	...
5. Official Postage, ..	152	6	...	130	6	6	162	6	9	193	14	6	168	3	...
TOTAL OF ESTABLISHMENTS.	13,608	0	1	23,369	5	5	19,142	5	3	18,139	2	9	17,851	1	9
GRAND TOTAL OF EXPENDITURE	27,815	0	2	61,335	11	2	44,780	11	...	37,802	11	4	51,449	15	7

20.

MENT, PUNJAB.

mary of Expenditure for 1874–75.—*Concluded.*

VANCY AND WORKING.

September.			October.			November.			December.			January.			February.			March.	
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.
19,440	0	3	18,123	9	9	28,218	5	0	13,645	6	7	51,622	15	10	23,275	14	4	31,242	8
..	10	6	27	4	...	15	13	...	...	...	...	...	10	6	25	...	...	83	..
45	15	...	51	...	...	36	...	...	62	13	...	363	2	...	...	...	...	141	1
7	7	3	4	7	...	7	10	3	...	8	...	12	9	...	18	8	...	134	7
..	...	...	...	...	...	190	15	...	52	12	...	33	5	4	26	4	...	...	...
..	...	...	...	...	...	...	...	...	5	12	...	119	15	10	43	...	...	204	1
...	...	...	18	...	...	...	...	...	...	...	...	102	11	...	...	...	...	20	4
19,494	1	...	18,224	4	9	28,468	11	3	13,767	3	7	52,255	5	6	23,388	10	4	31,825	6
1,000	...	...	1,000	...	...	1,000	...	...	1,000	..	...	1,000	...	...	1,000	...	...	1,000	...
3,880	10	4	7,100	..	...	4,050	...	...	4,593	5	4	12,950	...	...	7,833	13	11	8,286	9
4,743	...	8	8,885	0	9	4,857	9	6	6,351	...	5	8,589	2	6	5,116	11	1	7,278	12
1,270	...	...	1,965	...	...	1,230	...	...	1,364	4	1	1,864	8	3	1,410	10	2	1,605	9
..	...	..	..	..	...	...	...	...	...	...	...	...	...	...	..	...	...	180	...
186	...	...	...	...	...	436	14	3	156	1	...	144	8	..	146	8	...	131	...
759	8	4	1,478	4	11	2,889	2	10	1,397	13	9	3,898	14	3	1,417	12	7	1,943	2
466	10	11	863	8	8	824	1	3	649	14	1	915	0	3	583	4	7	887	0
138	6	...	224	12	1	424	4	1	374	12	2	454	1	8	147	7	1	349	2
48	9	6	126	6	9	50	5	...	80	11	6	124	6	6	79	11	3	193	1
217	13	...	275	1	3	124	4	...	217	8	9	382	11	6	155	7	...	372	3
28	...	...	28	..	...	28	...	...	28	...	...	45	9	7	28	...	...	28	..
357	4	4	828	0	2	407	6	3	380	11	11	1,092	0	9	570	10	...	1,604	1
99	5	9	167	4	...	108	15	...	141	7	..	138	4	6	143	14	...	222	1
13,195	4	10	22,941	6	7	16,430	14	2	16,735	10	...	31,599	3	9	18,633	13	8	24,082	
32,689	5	10	41,165	11	4	44,899	9	5	30,502	13	7	83,854	9	3	42,022	8	...	55,907	

WM. RIGHY, ASSISTANT Co

For Cons

NO.
FOREST DEPART

Annual Summary of Revenue and Expenditure

Budget Heads.	Direction.			Sutlej.			Beas.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
RECEIPTS.									
From Wood.									
1. Brought to Depôt by Departmental Agency									
(a). Timber and Bamboos	...	...	..	64,395	12	8	2 33,457	3	11
(b). Fire-wood and Charcoal	...	...	...	70	.	11	...	...	..
(c). Sandal wood	...	...	.	...	...	..	...	...	..
2. Wood removed from the forests by Purchasers, License-holders, and Permit-holders									
(a). Timber and Bamboos	...	..	.	994	2	4	9,276	11	9
(b). Fire-wood and Charcoal	...	...		456	5	...	509	12	
3. From confiscated, drift, and waif Timber	...	.	...	63	3	..	19	...	..
Revenue from minor produce.									
1. Grazing dues and sale of grass	...	...	...	149	12	...	4,287	9	11
2. Other minor produce	...	...	...	106	5	...	4	9	2
Duty on produce of Foreign or Private Forests imported into British Territory.									
1. On wood									
2. On other forest produce									
Miscellaneous.									
1. From fines and forfeitures	...	...	..	17	8	...	964	13	8
2. From refunds to the Department	...	...	..	13	1	..	...	..	...
3. From other sources	10	...	...	309	0	1	656	1	9
TOTAL REVENUE	10	..	...	65 575	8	...	2,49,175	14	3
EXPENDITURE.									
A.—Conservancy and Working.									
Cost of Timber Operations									
1. On wood brought to Depôt by Departmental Agency									
(a). Timber and Bamboos	...	...	...	44,701	2	...	30,927	4	1
(b). Fire-wood and Charcoal	...	...	...	17	...	...	...	...	...
(c). Sandal wood	...	..	...	...	...	...	...	...	...
2. On wood removed from the forests by Purchasers, License-holders, and Permit-holders									
(a). Timber and Bamboos	...	...	...	4	..	...	41	...	...
(b). Fire-wood and Charcoal	...	...	...	8	...	..	414	1	1
3. On confiscated, drift, and Waif Timber									
Cost of collecting Minor Produce.									
1. Grazing and sale of grass	...	...		34	...	...	...	..	...
2. Other Forest produce	...	...	...	34	8	6	...	...	...
Cost of Forest Organization.									
1. Demarcation lines and boundary pillars or marks ...	...	...	...	480	15	6	421	14	9
2. Working Plans	...	...	...	...	..	...	...	...	..
3. Surveys	...	...	...	410	6	...	...	.	...
Cost of the treatment and creation of Forests.									
1. Natural Forests									
(a). Protection from fire	...	...	..	...	...	...	...	...	...
(b). Fencing and enclosing	...	...	...	385	7	...	...	...	...
(c). Improvement and conservation	...	...	..	89	8	...	156	..	...
(d). "Reboisement" or restoration of denuded areas ...	...	..	..	...	...	...	974	10	1
2. Artificial Forests									
(a). Formation	...	...	...	...	..	...	...	...	...
(b). Protection from fire	...	.	..	...	..	...	...	...	...
(c). Improvement and conservation	...	..	...	...	...	..	...	...	...
(d). Fencing and enclosing.	...	...	...	...	...	...	...	...	.
Carried over	...	...	...	46,167	15	...	32,934	14	...

21.

MENT, PUNJAB.

in the different Divisions during 1875–76.

Ravi.			Chenab.			Jhelum.			Rawalpindi.			Fuel Reserve Central.			Fuel Reserve Northern.			Plantation.			Total.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
88,704	8	...	98,247	5	9	1,04,568	5	7	...	...	...	...	...	...	...	...	...	...	...	...	5,89,373	3	11
157	15	...	305	1	11	403	5	9	918	...	...	73,698	8	6	...	...	...	...	...	...	75,553	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
																					17,381	4	1
40	...	...	...	...	...	7,070	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38,551	3	7
107	1	9	459	6	...	3,624	13	3	23,449	5	9	2,697	5	7	306	3	1	6,940	15	2	541	5	11
115	3	3	262	8	...	...	...	...	...	...	...	...	...	...	1	...	.	80	7	8			
						3,653	15	6	3,623	5	9	97,309	12	11	46,906	14	6	6,556	7	..	1,62,487	13	7
...	...	...	...	...	...	219	10	...	...	...	...	703	9	6	514	1	...	4,661	7	9	6,209	10	6
...	...	..	...	...	...																		
80	5	...	110	1	6	319	2	...	419	4	9	78	13	8	24	0	1	33	15	9	2,048	0	5
49	14	5	120	...	...	65	..	...	...	...	...	...	...	...	...	...	...	1,666	4	5	1,914	3	10
483	5	8	1,263	8	...	356	14	...	...	...	..	1,147	...	3	1,482	3	5	5,974	...	3	11,681	15	5
89,738	3	1	1,00,767	15	2	1,20,281	2	1	28,410	...	3	1,75,635	2	5	49,234	6	1	25,913	10	...	9,05,741	13	4
																					1,52,136	8	3
38,918	8	1	25,549	13	11	12,036	12	2	...	...	...	...	...	...	...	...	...	...	...	...	67,281	5	2
129	2	8	1	15	6	...	...	...	918	...	..	66,215	3	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
																					290	...	...
...	...		...	...	..	245	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,155	2	1
...	..	..	...	...	...	130	...	...	546	...	...	9	10	8	47	6	4	...	..	...			
																					617	6	11
...	...	...	...	..	...	230	...	...	...	..	...	349	14	11	12	8	...	...		...	34	8	6
...	...	...	...	.	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...			
																		31	9	6	5,860	5	6
96	6	...	...	...	...	2,386	12	11	1,927	...	...	515	10	10	...	...	...				3,470	11	2
...	...	..	...	...	...	...	...	...	...	...	...	3,470	11	2	...	...	...	...	...	...	412	14	...
...	...	...	2	8	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...			
																					33	15	...
33	15	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	.	...	909	13	8
497	6	3	...	...	...	...	...	...	...	...	...	27	...	...	...	...	...	...	...	...	2,163	10	2
602	10	3	19	1	...	280	13	...	338	5	...	516	11	11	160	9	...	...	...	...	1,774	11	7
...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	800	1	6	...	...	...			
																		15,736	11	9	15,736	11	9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26,170	3	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	193	5	6	25,976	14	2	1,391	13	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,391	13	6			
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...									
40,278	...	8	25,573	6	5	15,309	6	1	3,729	5	...	71,685	13	8	1,218	14	4	4,3137	...	11	2,79,429	12	6

NO.
FOREST DEPART

Annual Summary of Revenue and Expenditure

Budget Heads.	Direction.			Sutlej.			Beas.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Brought forward	...	...	...	46,167	15	...	32,934	14	...
EXPENDITURE—*Concluded*									
V. Rent of Leased Forests	...	...	...	3,800	...	...	...	...	...
VI. Cost of Collecting Duty on Produce of Foreign or Private Forests imported into British Territory ...									
VII. Works of utility for the development of Forests.									
1. Roads and Bridges	...	...	...	178	5	...	56	14	...
2. Buildings and Offices	...	...	...	1,910	...	8	931	...	7
3. Compensation for land taken up for forest purposes, or for extinction of Forest rights	...	...	...	...	...	...	380	14	...
4. Other works	...	...	...	39	10	2	...	...	...
VIII. Cost of Departmental Cattle.									
1. Purchase of stock	...	...	...	...	...	...	...	...	...
2. Hire of stock	...	...	...	...	...	...	...	...	...
3. Feed and keep of cattle	...	...	...	86	8	...	...	...	...
IX. Cost of Departmental Plant and Tools.									
1. For timber and wood operations	...	...	...	52	1	...	250	...	...
2. For other purposes	...	...	...	13	9	3	9	12	...
X. Miscellaneous Charges.									
1. Refunds	...	...	...	...	...	...	...	...	...
2. Law charges	296	6	7	...	...	...	3	8	...
3. Other charges	...	...	...	...	...	...	122	15	...
Total of Conservancy and Working ...	296	6	7	52,248	0	8	34,689	13	7
B.—Establishments.									
I. Salaries.									
1. Pay of Conservator	12,000	...	...	...	...	...	...	...	...
2. Pay of Control and Executive Officers	5,550	...	...	17,100	...	...	8,501	2	2
3. Protective Establishments	253	8	...	3,625	...	...	10,522	15	5
4. Office Ditto	6,863	13	1	945	15	6	1,274	...	6
5. Deputation and Special Allowances	...	...	...	180	...	...	...	...	...
II. Travelling Allowances.									
1. Conservator	2,067	14	3	...	...	...	...	...	...
2. Control and Executive Officers	666	7	8	4,014	5	8	1,864	10	...
3. Protective Establishments	...	...	...	243	2	6	1,854	3	8
4. Office Ditto	442	9	1	166	5	2	633	6	9
III. Contingencies.									
1. Stationery	10	11	...	59	6	9	156	7	9
2. Carriage of Tents and Office Records.	328	5	...	302	2	3	335	14	8
3. Pay of Police Guards	...	...	...	23	9	7	...	...	...
4. Sundries	974	5	6	836	14	10	1,277	8	11
5. Official Postage	348	3	6	83	2	6	273	6	6
Total of Establishments ...	29,505	13	1	27,580	0	9	26,693	12	4
GRAND TOTAL OF EXPENDITURE ...	29,802	3	8	79,828	1	5	61,383	9	11

21.—*Concluded.*

MENT, PUNJAB.

in the different Divisions during 1875-76.

Ravi.			Chenab			Jhelum			Rawulpindi.			Fuel Reserve Central.			Fuel Reserve Northern.			Plantation.			Total.		
Rs	A.	P.	Rs.	A	P	Rs.	A.	P	Rs	A	P	Rs.	A.	P.	Rs.	A	P.	Rs.	A.	P	Rs	A	P.
40,278	...	3	25,573	6	5	15,309	6	1	3,729	5	...	71,085	13	8	1,213	14	4	43,137	...	11	2,79 129	12	6
...	...	...	21,000	..	.	3 550	12	...	...	..	..	...	...	...	...	...	..	...	..	...	28,350	12	..
												6	12	..	...	...	...	...	...	..	737	1	..
60	4	6	378	14	9	5	1	9	50	...	..	1,087	6	...	334	4	6	686	7	4	6,653	1	7
387	7	6	446	1	5	374	1	..	496	5	...												
												...	.	..	...	..	...	...	...	...	380	14	...
...	..	...	...	.	...	...	...	..	...	...	.	40	..	...	...	...	...	...	...	...	142	4	2
...	..	...	...	..	..	62	10	.	...	.	..												
...	...		...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	..	...	...	...	..
...	..	...	...	...	...	...	.	..	...	...	...	...	...	..	...	..	...	...	.	...	...		.
...	..	...	...	..	..	...		...	...	...	...	129	3	..	...	..	.	...	..	.	215	11	...
264	13	8	148	10	6	96	2		188	12	..	...	..	.	...	..	.	...		..	1,000	7	2
4	8	...	...	...	...	...	...	...	...	...	...	228	14	...	44	9	6	406	6	3	697	11	..
26	4	..	...	.	...	...	..	...	...	...	...	120	1	4	215	2	.	...	...	...	361	7	4
...	.	...	...	.	.	46	...	...	...	...	..	22	1	..	...	..	...	4	13	3	372	12	10
4	15	.	...	.	...	...	...	..	...	...	...	18	...	...	...	...	..	...	..	...	145	14	...
41 026	4	11	47,547	1	1	19,444	13	10	4.464	6		72,738	3	.	1,807	11	4	44 234	11	9	3,18.497	12	7
...	.	..	...	...	...	...	..	.	...	...	...	...	..	...	..	...	...	...	.	..	12,000	...	..
7,800	...	...	6,405	6	..	10,063	12	7	5,224	2	2	11,311	9	9	908	4	9	5 530	10	4	78,394	15	9
6,690	6	...	4 728	4	6	4 840	12	11	5.832	.	...	20,623	12	3	11,962	...	7	5 56 5	14	1	74 584	9	9
1 500	...	...	1,371	7	2	1,523	11	4	480	...	.	1,440	.	..	960	...		1,575	1	11	17,934	1	6
...	...	.	...	...	...	...	..	...	...	...	...	...	.	...	...	..	...	...	...	.	180	.	..
...	...	.	...	.	...	..	...	...	...	.	..	...	..	..	..	...	...	...		..	2,067	14	3
2,494	1	4	2,279	5	3	3,645	8		1 254	9	6	4,367	17	10	1,541	3	6	2,273	14	8	24,101	9	5
1,079	13	1	334	13	8	626	5	11	797	9	1	9,254	15	4	1,180	5	4	890	15	8	8 256	6	3
573	5	3	357	2	2	500	3	10	139	5	8	154	10	2	185	15	1	208	14	7	3,361	13	9
71	4	6	139	4	3	207	10	1	82	12	.	448	14	6	53	6	9	122	1	3	1 351	14	
465	9	...	625	7	6	434	14	6	88	10	...	245		4	127	14	8	70	10	..	3,023	13	6
...	..	..	833	...	...	...	...	.	...	.	.	...	..	.	...	..	.	...	...		356	9	7
336	9	11	1,573	11	3	1,071	13	1	264	14	...	802	13	2	434	9	8	412	7	7	7,461	12	6
137	9	6	169	7	...	153	10	..	117	13	...	287	13	6	129	5	.	128	11	..	1,829	1	6
21,148	12	7	18,317	4	9	23,061	12	3	14,281	8	5	40,937	.	10	17,483		6	16,719	5	1	2,35,728	6	7
62,175	1	6	65,864	5	10	42 506	10	1	18,745	14	5	113,581	1	8	19,290	14	10	60 954	..	10	5.54,226	3	2

WM. RIGHY, ASSISTANT CONSERVATOR,

For Conservator of Forests, Punjab,

In charge of Office of Forest Account.

NO. 22.

FOREST DEPARTMENT, PUNJAB.

Annual Abstract Account of the Cash Transactions of the Department for the year 1875–76.

	Rs.	A.	P.		Rs.	A.	P.
To Cash Balance in hand on 1st April 1875	29,599	8	11	By Expenditure of the Department	* 5,64,164	12	5
„ Revenue received	9,05,741	13	4	„ Remittances to State Treasuries	6,56,961	2	7
„ Remittance from State Treasuries	5,34,891	5	5	„ Transfers to the P. W. D.	2,47,154	3	9
„ Transfers from the P. W. D.	1,275	1	6	„ Advances made	12,566	6	3
„ Advances recovered	18,840	11	9	„ Refunds	25	15	6
„ Cash recoveries	9,938	9	3	„ Government of Bengal	450	0	0
„ Government of India	4,444	8	10	„ Bengal Military Department	442	8	0
„ Jails	911	4	3	„ Jails	2	4	0
„ Bengal Military Department	823	1	0	„ Cash Balance on 31st March 1876	25,252	8	9
„ Settlement Department	53	13	0				
„ Government of Bombay	500	0	0				
Total ...	15,07,019	13	3	Total ...	15,07,019	13	3

	* 5,64,164	12	5	
Minus	9,938	9	3	Cash Recoveries.
	5,54,226	3	2	See Forms 20 and 21.

WM. RIGHY, ASST. CONSR.,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

NO. 23.

FOREST DEPARTMENT, PUNJAB.

Annual Statement of Outstanding and Liabilities of the Department on account of Contractors and Disbursers during 1875-1876.

A.—Amounts charged under Advances recoverable.

DIVISIONS.	AT OPENING OF THE YEAR.		Advances.	Recoveries.	Due by Contractor.	Due to Contractor.
	To Contractor.	By Contractor.				
Sutlej ...	...	...	1,233	1,233	...	...
Beas ...	...	...	998	...	998	...
Ravi ...	...	...	46	46	...	...
Chenab ...	...	*a* 895	603	1,479	19	...
Jhelum ...	...	*a* 1,235	6,113	7,157	2,291	2,100
Rawulpindi ...	...	...	165	165	...	...
Fuel Reserve,	...	83,783	909	3,362	81,330	...
Plantation ...	...	3,378	24	3,024	378	...
Direction ...	...	74	2,475	2,374	175	...
Total ...	...	89,365	12,566	18,840	85,191	2,100

B.—Amounts charged off to Conservancy and Working.

DIVISIONS.	AT OPENING OF THE YEAR.		Advances.	Recoveries.	Due by Contractor.	Due to Contractor.
	To Contractor.	By Contractor.				
Sutlej ...	...	...	12,947	11,817	1,130	...
Beas ...	...	17,400	16,132	22,932	10,600	...
Ravi ...	342	4,456	33,500	34,395	3,561	342
Chenab ...	...	153	1,898	1,567	484	...
Fuel Reserve,	5,104	17,531	42,879	45,880	9,426	...
Plantation ...	...	293	4,763	5,056	...	...
Total ...	5,446	39,833	1,12,119	1,21,647	25,201	342

Outstandings on Sales Account.

DIVISIONS.	Balance at Opening.	Supplies.	Revenue.	Balance due.	REMARKS.
Sutlej ...	4,032	64,546	64,006	4,572	
Beas ...	7,239	2,08,221	2,11,664	3,796	
Ravi ...	1,178	86,435	85,405	2,208	
Chenab ...	9,730	95,772	98,248	7,254	
Jhelum ...	...	1,08,149	1,04,568	3,581	
Fuel Reserve ...	25,633	1,68,903	1,76,519	18,017	
Plantation ...	1,252	24,042	24,467	827	
Total ...	49,064	7,56,068	7,64,877	40,255	

a. Added by Accountant General.

WM. RIGHY, ASSISTANT CONSERVATOR,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

NO. 24.

FOREST DEPARTMENT, PUNJAB.

Statement of Timber brought to Depôts from Forests during 1875–76.

DIVISIONS.	Description of Timber.	Pieces or Logs.	Cubical contents.	TOTAL OF EACH RIVER. Pieces or Logs.	TOTAL OF EACH RIVER. Cubical contents.	REMARKS.
Sutlej ...	Deodar ...	16,354	2,15,322	...	...	
	Pines ...	1,297	15,782	...	...	
	Toon ...	30	159	...	...	
	Beams ...	6,355	...	...	...	
	Sleepers ...	10	13	24,046	2,31,276	
Beas ...	Deodar ...	2,051	59,253	...	...	
	Pines ...	969	17,939	...	...	
	Sleepers ...	23,921	61,094	26,941	1,38,286	
Ravi ...	Deodar ...	3,814	85,594	...	...	
	Pines ...	1,133	17,020	...	...	
	Beams ...	2,096	...	...	...	
	Sleepers ...	10,654	14,169	17,697	1,16,783	
Chenab ...	Deodar ...	13,695	1,22,648	...	...	
	Pines ...	5,708	48,566	...	...	
	Sleepers ...	1,217	1,616	20,620	1,72,830	
Jhelum ...	Deodar ...	1,337	31,117	...	...	
	Pines ...	734	31,323	2,071	44,440	
Grand Total, ...	...	...	...	91,375	7,03,615	

WM. RIGHY, ASSISTANT CONSERVATOR,
For Conservator of Forests, Punjab,
In charge of Office of Forest Accounts.

NO. 25.

Forest Department, Punjab.

Annual Timber Account for 1875–76.

I.—Stock in hand at following Depôts:—		
Sutlej	19,079	
Beas	69,365	
Ravi	2,897	
Chenab	13,942	
Jhelum	15,232	1,20,515
II.—Timber received at following Depôts:—		
Sutlej	24,046	
Beas	26,941	
Ravi	17,697	
Chenab	20,620	
Jhelum	2,071	91,375
Total ...	...	2,11,890

I.—Timber removed from Depôts:—		
Sutlej	17,568	
Beas	93,242	
Ravi	20,056	
Chenab	29,007	
Jhelum	8,470	1,68,343
II.—Timber used for Buildings:—		
Beas	248	
Chenab	10	
III.—Timber lost by floods, Beas	22	
IV. Do. converted into charcoal, Chenab ...	404	684
V.—Stock in hand at close of year:—		
Sutlej	25,557	
Beas	2,794	
Ravi	538	
Chenab	5,141	
Jhelum	8,833	42,863
Total ...	...	2,11,890

Wm. RIGHY, Assistant Conservator,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

NO. 26.

FOREST DEPARTMENT, PUNJAB.

Statement showing the amount realized on account of the different classes of Timber sold during 1875-76.

DIVISIONS.	Number of logs sold.	Cubical contents.	Amount realized and due on account of timber sold.	Average amount per log.	Average cubical contents of log.	Average amount per 100 cubic feet.	REMARKS.
Sutlej ...	6.693	93,941	52,469	7 83	14·03	55 85	Logs.
Do. ...	7,338	...	5,911	·80	...	...	Beams.
Do. ...	3.537	4,715	6,165	1·74	1·33	130·75	Sleepers.
Beas ...	2.251	66,827	40,738	18 09	29·69	60·96	Logs.
Do. ..	90,991	1,71,388	1,67.483	1·84	1·88	97 71	Sleepers.
Ravi ...	7,276	1,46,847	78,084	10·73	20 18	53·17	Logs.
Do. ...	2,096	...	1,292	·61	...	...	Beams.
Do. ...	10,684	14,209	7,059	·66	1·33	49 68	Sleepers.
Chenab ...	27,604	2,59,635	91,564	3·31	9·40	35·26	Logs.
Do. ...	1,403	1,865	4,208	3 00	1·33	225·63	Sleepers.
Jhelum ...	8,470	1,88,700	1,07,546	12 69	22·27	56·99	Logs.
Total ...	1,68,343	...	5,62,520	...	...	...	

Deduct amount due but not realized during the year ...	4,368	Only Timber sales.
Balance ...	5,58,152	
Add amount realized on account of former years ...	5,386	Do. do.
Total shown as Revenue on account of timber sales ...	5,63,538	

WM. RIGHY, ASSISTANT CONSERVATOR,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

NO 27.

FOREST DEPARTMENT, PUNJAB.

Statement showing the amount expended on account of Timber received from the different Forest Divisions during 1875-76.

Names of Divisions.	No. of logs or pieces.	Cubical contents.	Timber expenses.	Conservancy expenses, cost of Establishment, &c, of the Department, excluding Direction.	Total amount expended, excluding Direction.	Average amount paid per log or sleeper.	Average cubical contents per log or sleeper.	Average amount paid per 100 cubic feet.	REMARKS.
Sutlej	17,681	2,31,263	44,704	27,580	72,284	...	13·07	31 25	
Do.	6,355	...				...	...		
Do.	10	13				...	1·33		
Beas	3,020	77,192	30,927	26,289	57,216	...	25·56	41·37	
Do.	23,921	61,094				...	2·55		
Ravi	4,947	1,02,614	38,918	21,149	60,067	...	20·74	51·42	
Do.	2,096	...				...	...		
Do.	10,654	14,169				...	1·33		
Chenab	19,403	1,71,214	25,550	18,317	43,867	...	8 82	25·39	
Do.	1,217	1,618				...	1 33		
Jhelum	2,071	44,440	10,801	22,948	33,749	...	21·45	76·0	
Total ...	91,375	...	1,50,900	1,16,283	2,67,183	...	...	...	

WM. RIGHY, ASSISTANT CONSERVATOR,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

NO. 28.

Forest Department, Punjab.

Annual Account of Forest Revenue for 1875-75.

Receipts.				Disbursements.			
Amount of revenue realized in 1875 ...	9,05,742	0	0	Amount disbursed in 1875 ...	5,54,226	0	0
Deduct amount realized on account of previous periods,	16,427	0	0	Deduct amount disbursed on account of transactions of former periods ...	...	...	...
Balance	8,89,315	0	0	Balance ...	5,54,226	0	0
Add outstandings on account of the year	8,273	0	0	Add amount due for transactions during the year under review, but not yet disbursed ...	...	...	...
Minus for bad debts	...	...	...				
Value of the year's transactions ...	8,97,588	0	0	Real cost of the year's transactions ...	5,54,226	0	0

Value of the year's transactions ...	8,97,588	0	0
Cost of the year's transactions ...	5,54,226	0	0
Balance ...	3,43,362	0	0
Deduct difference between the value of stock at the commencement and close of the year,	1,91,304	0	0
Net results of the year ...	1,52,058	...	...

N. B.—If at the close of the year the value of stock should be in excess of what it was at the beginning of the year, the sale value of the excess should be added to the net result less such percentage on account of loss and deterioration as past experience has shown to be usual. Should, however, there be a deficiency at the close of the year, a deduction should be made, *not* of the price at which the stock was sold, but the sum, more or less, that it would take to *replace* it.

* Value of stock in Sale Depôts at commencement ... Rs. 4 88,391
Do. do. do. Transit ... ... „ 1,46.006

Total ... Rs. 6 34,497

Do. do. Sale Depôts at close ... ... Rs. 2 99,044
Do. do. in Transit ... ... „ 1,44,049

Total ... Rs 4,43 093

Against the year ... ... Rs. 1,90,304

Wm. RIGHY, Assistant Conservator,
For Conservator of Forests, Punjab,
In charge of Office of Forest Accounts.

Detailed List of Revenue realized on account of former year. Supplementary to Form 28.

NAMES.	Amount.			Budget Heading.	REMARKS.
	Rs.	A.	P.		
Assistant Engineer, Sealkote Division ...	2,475	15	0		
Executive Engineer, Kangra Roads Division,	2,584	2	0		
Dr. Quinnell	134	6	2		
Officer Commanding 81st Regiment ...	191	3	0		
Ameer Bux	355	0	0		
Ahmed Yar	30	0	0		
Devi Dial	168	7	6		
Meeran Bux	883	5	4		
Sher Mahomed and Bussoo	5,466	13	0		
Sirdar Futteh Sing	184	0	0		
Bishen Sing	595	0	0		
Lukha	382	0	0		
Kirpa Ram	14	0	0		
Alawab	30	0	0		
Jowahir Sing	440	0	0		
Husta	62	0	0		
Sher Mahomed	1,256	4	0		
Jowahir Sing	200	0	0		
Gunga Ram	412	4	3		
Lall Sing	50	0	0		
Visawa Sing	352	8	0		
Sharf Din	160	0	0		
TOTAL Rs. ...	16,427	4	3		

WM. RIGHY, ASSISTANT CONSERVATOR,

For Conservator of Forests, Punjab,

In charge of Office of Forest Accounts.

Sales on Account of the year. Supplementary to Form 28.

NAMES.	Amount.			Budget Heads.	REMARKS.
	Rs.	A.	P.		
Matha	371	0	0		
Faiz Bux	150	0	0		
Jelaloodin	250	0	0		
Subhan	150	0	0		
Churt Sing	243	12	0		
Jelaloodin	6	4	0		
Sujjun	174	10	8		
Sona	210	0	0		
Shahabie	45	0	0		
Cheragdin	182	8	0		
Meeran Bux	193	12	0		
Tara Sing	86	13	9		
Churn Dass	27	8	0		
Gyan Singh	131	4	0		
Golam Hossein	1,150	3	0		
Commissariat Department ...	54	0	0		
Military Department	478	12	0		
Deputy Commissioner, Gurdaspur ...	780	1	0		
Mr. P. Scott	3,048	0	0		
Chujjoo Mull	540	0	0		
TOTAL Rs. ...	8,273	8	5		

WM. RIGHY, ASSISTANT CONSERVATOR,
For Conservator of Forests, Punjab,
In charge of Office of Forest Accounts.

Area of Plantations.

PLANTATIONS.	Area in 1874-75.	Total cost up to 1874-75.			Area added during 1875-76.	Amount expended during 1875-76.			Total area up to 1875-76.	Total expenditure incurred up to 1875-76.			REMARKS.
(A.)—Chunga Manga.													
Chunga Manga	7,212	2,56,509	7	10	960	34,248	5	5	8,172	2,90,751	13	3	Exclusive of 2,446 acres of land taken over for future works.
(B.)—Lahore Sailaba.													
1 Jugian, Shahdera & Mahmud Buti	827	15,690	6	11	389	2,714	2	11	1,200½	18,404	9	10	15½ acres lost by erosion.
2 Jhoke and Sadhanwali ...	990½	13,429	3	10	197	2,110	11	10	1,181½	15,539	15	8	6 " "
(C.)—Outlying Plots.													
Sukh Ravi	600	12,842	14	2	...	25	7	3	600	12,868	5	5	Returned to F. R. Central Division, but included as the year's income is credited to plantation.
Khanwah	360	11,248	12	9	...	43	8	9	360	11,292	5	6	
Nag	412	27,328	6	4	...	743	13	9	412	28,072	4	1	
Jullundur	50½	3,366	8	4	...	61	7	0	50½	3,427	15	4	
Phillour	239	12,709	7	8	...	134	14	6	239	12,844	6	2	
Ludhiana	190	5,689	7	2	...	327	2	9	190	6,016	9	11	
Jagadri	183½	8,891	14	10	...	216	7	6	183½	9,108	6	4	
Kathala	160	16,096	1	9	...	3,358	13	8	26	19,454	15	5	134 acres returned to owners.
Thatta Fakir-ulla	393	3,125	11	3	...	67	14	6	393	3,193	9	9	
Carob plot	...	...	...	...	37	1,990	10	7	37	1,990	10	7	
(D.)—Rukh Improvement.													
Kikranwali	576	1,182	3	2	...	64	12	6	576	1,246	15	8	
Experiments including Amballa Nursery	1	803	13	0	...	7	6	0	...	811	3	0	
TOTAL ...	12,194½	3,88,914	7	0	1,583	46,115*	10	11	13,622	4,35,030	1	11	
Plantations in other Districts.													
Sholtu (Sutlej)	150	516	0	0	...	...	...	...	150	516	0	0	
Nowshera (Beas)	510	...	...	...	...	...	...	...	*437½	...	...	...	Cost not stated.
Chitril Nursery (Kangra) (?) ...	7½	...	...	...	2	...	...	..	9½	...	...	...	*Difference lost by deluvion.
Basu (Ravi) 50 acres	900	...	...	...	...	...	...	...	900	...	...	...	
Dhauri (Do.) 25 "													
Bamal (Chenab)	Has been struck off & ought to be restored												

N. B.—The return of Plantations from other districts it is impossible to complete this year, as care has not been taken to distinguish artificial plantations from nurseries and plots in existing forests under improvement.

* To this may be added a grant of Rs. 3,000 to the Peshawur District for the purposes of plantation.

Statement of Prosecutions for Forest Offences, 1875.

Division.	No. of Prosecutions.		Convictions obtained or pending.		Remarks.
	Cases.	Persons.	Cases.	Persons.	
Sutlej ...	8	10	3	4	
Beas ...	228	565	214	550	
Ravi ...	42 (Chumba) 33	59 ...	29 24	42 ...	
Chenab ...	5	7	2	3	
Jhelum ... Do. on river,	145 8	... 23	94+13 pending 8	... 23	*Vide* detail annexed, which is given to show how Divisional returns should in future be prepared, but the number of persons concerned is wanting.
Fuel Reserve Central ...	Case against Forester, 1* Theft of produce ... 74 Mischief by fire ... 3 Illicit cultivation ... 8 Cattle trespass ... ? 86	1 74 ... ... ? 75	1 67 3 8 ? 79	1 ... ... 8 ? 9	* Forgery. 24 cases of Departmental fines inflicted for negligencies or disobedience.
Fuel Reserve Northern ...	Cattle treepass : — 1,998 goats. 122 camels. 264 buffaloes. 740 cows. 64 donkeys. * Theft of produce ... 47 Other offences ... 4 Rescue of cattle ... 14 65	 111 12 44 167	 41 3 7 51	 89 10 25 124	*Total fines Rs. 512-8. Goats which ought to be fined 5 times, and as heavily as any other animal (except camels) pay one anna only.
Plantation ...	7	11	7	11	
Rawulpindi ...	114	323	93+9 pending.	281+11 pending.	

FOREST DEPARTMENT, PUNJAB.

List of cases of Offence in the Jhelum Forest Division during 1875-76.

Sub-Range.	No. of cases instituted.	Nature of Offence.	No. of cases dismissed.	No. of cases still pending.	No. of cases proved and punished.	Punishment. Amount of Fines.	Punishment. Imprisonment.	REMARKS.
							y. m.	
L. Jhelam S. Division ...	1	Embezzlement by Establishment ...	...	...	1	14,000	10 6	
Do. ...	9	Sawing and chipping wood illicitly ...	5	...	4	175	...	
Kagan Sub-Range	2	Setting Fire to Forests	...	...	2	30	...	
	23	Destroying timber	3	2	18	219	1	
	5	Cattle Trespass	5	...	...	... ...	...	
"Siran" Sub-Range	2	Setting Fire to Forests	...	...	2	4,400	...	
	10	Destroying timber	3	1	6	89	...	
	7	Cattle Trespass	3	...	4	20	...	
Dunga Gali Do.	8	Setting fire	...	8	...	... ...	...	
	20	Destroying timber	8	2	10	26	...	
	7	Cattle Trespass	4	...	3	10	...	
Khanpur Do.	24	Setting fire	...	...	24	1,048	...	
	9	Destroying timber	3	...	6	21	...	
	18	Cattle Trespass	4	...	14	23	...	
Total Rs. ...	145		38	13	94	20,061	10 7	

(SD). E. SPARLING,

Offg. Deputy Conservator of Forests, Jhelum Division.

Area Statement of Reserved Forests, Punjab, 1875.

E. means "Estimated" (no survey). L. leased or subject to payment of seignorage fees.

Name of Division.	Chief group or Sub-Division.	Area in 1874.	Added during the year.	Excluded or transferred.	Total in 1875.
Sutlej ...	Basahir	(1) E 80 sq. miles = 51,200 acres.	...	Altered to Estimate of working plan 1875 ...	(2) 24,600 acres L.
	Kalesar	E 10 × 5 miles = 32,000 acres	...	Kalesar is still ...	E. 32,000 acres.
Beas ...	Kulu	E 9,651	...	...	E. 9,651 acres.
	Sooraj and Plach...	E 3,361	...	...	E. 3,361 „
	Total ...	13,012 Upper Beas	...	...	E. 13,012 Up. Beas.
	Nurpur	9,703 acres	...	...	9,703
	Dera	*11,203 „	41	121·5	11,122·5
	Hamirpur	4,470 „	...	...	4,470
	Kangra	..	...	...	...
	Total ...	...		...	25,295·5
	Hoshyarpur ...	15,847	...	...	15,847
Ravi ...	Kalatop	2,870	...	...	L. 2,870 (5)
	Bakloh	1,280	...	...	1,280 E. L.
	Ravi main river &c., Chaurah	29,775	21,085E	...	50,860 E. L.
Chenab ...	Pangi valley, &c. ...	21,348 area surveyed...	...	...	64,348 E. L.
		43,000 E	...	...	
	Total ...	64,348 E	...	...	
Jhelam ...	Dunga Galli Range,	41,017	...	...	41,017 (L.)
	Kaghan Range ...	57,987	...	...	57,987 (L.)
	Siran Range ...	20,986	...	...	20,986 (L.)
	Khanpur Range ...	31,786	...	...	31,786 (L.)
Rawul Pindi,	Plains Forest ...	130,934	...	6,905 (3)	E. 1,22,029 (4)
	Hill Forests, *i. e.*, Murree and Kahuta	52,989	...	...	E. 52,989

* This is the latest correction received after the body of the report was finished.

Note.—The reservations are not yet complete. The table shows the existing Government "trihai".

Note (1.)—Deodar localities and with it some of the forest as may be required probably entered were 152 miles of river, thus :—

Sutlej—mouth of Toti to Tranda	43 miles.
Bespa to Rakcham	12
Smaller Tributaries above Wungtu	21
Tributaries below Wangtu	76
Total	152

(2.)—The valuable pine forests if included, (as they may be at pleasure) may bring up the area at least to 50,000 acres.

(3.)—The area as given in 1874, though it deducted some of the Rukhs, did not deduct Sairah and part of Banoregalla and Margalla (estimated); this is now done.

(4.)—Area as finally arranged for this settlement by Captain Wace. The statement and area given in the 1874 report for Murree and Kahuta is drawn from the M. S. S. Rukh Register prepared in Colonel Hall's time.

(5.)—The correct area as per working plan is given.

Area Statement of Reserved Forests, Punjab, 1875.—*Concluded.*

E. means "Estimated" (no survey). L. leased or subject to pagment of seignorage fees.

Name of Division.	Chief group or Sub-Division.	Area in 1874.	Added during the year.	Excluded or transferred.	Total in 1875.
Fuel Reserve Central ...	Lahore	2,16,912	...	667 by grant & 2,446 acres to plantation,	2,13,799
	Amritsur	2,724	69 alluvian	...	2,793
	Montgomery ...	552,794	960 (forest plantation	470 grant	5,53,264
	Multan	59,958	33 alluvian	12 (deluvian)	55,979
	Mozufferghur ...	113,955	Under Settl	ement and can	not be stated.
	Dera Ghazi Khan...	34,129	Do.	and	do. do.
	Gujranwala and Jhang, ...	242,606	87 (alluvian) ...	...	2,42,693
	Gurdaspur... ...	Not known	Not yet	settled.	
	Jullunder	...	250 (Rukh) returned by Plantation Division ..	...	250
Fuel Reserve Northern... (6)	Jhelum	316,117	...	...	316,117
	Gujrat	53,953	...	...	53,953
	Shahpur	285,501	...	...	285,501
	Kachhi Shisham Forest	...	1,414	...	1,414 in 15 plots.
Artificial Forest Area ...	Chunga Manga ...	7,212	960 } (7) 2,446 }	...	8,172 } 2,446 }
	Lahore Sailaba ...	1817·5	586	21·5 deluvian,	2,382
	Outlying Plantations,	2,838	37	1,344 to Rukh division and leased lands returned ...	1,531 (8)
	Rukhs under improvement ...	576	...	...	576

(6.)—The Fuel Reserve Northern Division will please classify next year—(a) Rukhs in Plains (each District given separately); (b) Salt Range Rukh (Shahpur); (c) Pubbi Range; (d) Islands or Belas (Chenab, Jhelum); (e) Kachhi.

(7.)—Added for future requirements.

(8.)—Consists of Nag (41½) Jullundur (50½), Phillour (289), Ludhiana (190), Jagadri (183½), Carob Plantation, (37), Thatta F. U. (393), Kathala (Nursery) (26.=1,531 acres.

B. H. BADEN-POWELL,

Conservator of Forests, Punjab.

Proceedings of the Honorable the Lieutenant-Governor of the Punjab, in the Department of Revenue, Agriculture and Commerce (Forests),—No. 123½ F., dated 26th March 1877.

READ—

The Report of the Punjab Forest Administration for the year 1875-76, received in a printed form on the 18th November.

REMARKS.—The Lieutenant-Governor has delayed his review of this report, as he wished to consider it in connection with several important forest cases now before him.

Orders on these cases will be subsequently recorded; but the information gathered and the principles suggested by their perusal have guided the following remarks:—

2. The experience of forest administration during the period of Sir Henry Davies' incumbency has prominently brought out several important considerations, and it is now possible to state with some precision what should be the aims which the department should keep in view. A closer connection can also be established between the working of the department and the general progress of the province, and observations can be made tending to a more intelligent and harmonious co-operation on the part of the Civil Officers towards the ends, which the Forest Department acknowledges.

3. In the first place, the reduction of the area under the department in certain localities, so as to secure a more efficient control within the real competence of the existing establishment, is already a recognized object of the forest administration. It now remains to lay down definite principles for selecting areas to be strictly and permanently reserved, as well as other tracts for the yield of material under conditions compatible with the free exercise of popular rights and to be under conservancy either pending the spread of cultivation or permanently according to circumstances.

4. In the plains the gradual cultivation of waste lands not permanently required as such should be regarded as an eventual possibility to be realized wherever practicable, and in strictly closing areas for forest purposes the main object should be the supply of material for towns, cantonments and railways. The selection of close reserves in the plains should therefore be mainly guided by the proximity of the tracts in question to roads, rivers, railways, and large cities.

Plots specially in the vicinity of railways will be wanted permanently, and should ultimately be worked on a regular plan by the usual methods of Forestry. It will probably be found best to take such plots under purely departmental control, and free them altogether from popular rights of every description. On the other hand, there are in many parts of the Punjab large expanses, remote from cities and channels of trade, where strict conservancy is unnecessary. Here the main object of forest control should be to manage the revenues from grazing and other sources to the best advantage compatible with the exercise of prescriptive rights by adjacent landholders; and it would be understood to be profitable in every way, both for the country at large and for the finances, for such revenues to be gradually supplanted, where practicable, by the more remunerative taxation leviable on the cultivation of the soil. It is in this department of forest administration that District Officers would be most employed. Profesional skill being of comparatively little consequence, they would deal with village requirements and customs they would manipulate the grazing leases where such were approved and on application being made, would conduct the lease and sale of waste lands for cultivation. But the secondary object of control would be the preservation of the sources of production so as to prevent lasting deterioration in tracts on which there would be a permanant drain for the needs of the rural population as regards grazing, fuel supply, and timber for domestic and agricultural purposes. The Forest Department would aim at meeting the wants of the State, and to a lesser extent, of commercial and other centres, but the villages, as regards these

wants, would remain self-supporting, as at present. Here the advice of the Forest Officer would be most necessary ; and in connection with the proposed forest legislation, His Honor would observe that the District Officer should have power, on occasion arising, to place particular localities under strict conservancy for a limited time in order to admit of reproduction. The subject of forest in the plains may be dismissed with the remark that plantations or artificial forests would be maintained for the same purposes and under like conditions of site, as the plots selected from existing forest areas for strict conservancy under the department and for the purposes of permanent supply.

5. In the hills there comes into play a new set of considerations. It is well known that on mountain ranges there are certain situations where forests have a value to the large and lasting interests of a country altogether independent of the amount of annual yield. It is unnecessary to say much on this subject, which has been treated with professional skill by Mr. Baden-Powell in his recent pamphlet on the Demarcation of the Forest Area in Districts containing Hill and Mountain Ranges, to which the attention of Commissioners and Deputy Commissioners in hill divisions and districts is invited. His Honor would not here refer to the most elementary rules of forest conservancy in mountain ranges, were he not convinced by recent correspondence which has come before him that too many District Officers are either unacquainted with, or have forgotten, the simple principle that since steep ridges and the basins and courses of mountain streams are subject to the destructive influences of storms and torrents, unless protected by verdure and woods, cultivation in such localities is rarely lasting, the soil of the bare hillside or ravine being carried away in *detritus*, whilst the streams, changed by denudation into torrents, sweep down to the plains rocks and boulders and sand which may reduce cultivable areas to unculturable waste. The neglect of this principle, by felling or firing forests in the wrong places, tends directly to reverse the normal progress of society, because it involves the retrograde change of cultivators into herdsmen, the hills by their loss of soil becoming ultimately useless for every rural purpose but pasturage. On the other hand, duly to apply this principle, it will be necessary to reserve under strict forest control many areas which, if abandoned to the free exercise of village rights, will certainly lose their forest character. The policy indicated has already guided the proposals for the revision of the Hazára Forest Regulation, which have been submitted to the Government of India ; and the new Forest Bill provides the means of placing the respective rights of the Government and the people on a definite and satisfactory basis, such as is indispensable in any country where the principles of legal procedure and of jurisprudence, approved by the experience of Europe, underlie the decisions of the Courts. Forest settlements, His Honor believes, are a boon both to the people and the State by the decision of old and complicated questions and the adjustment of conflicting interests. Under the facilities for effecting such settlements, which the Forest Bill affords, it should be easy to secure for efficient conservancy those portions of the Punjab Himalaya where physical conditions point to the preservation of forest as a factor in social progress.

6. In noticing the last Punjab Forest Review the Government of India invited more special reference to the professional and financial portions of the Forest Report, and expressed a hope that whatever measures might be decided upon in regard to the reduction of forest area, the future requirements of the country would not be lost sight of. The foregoing remarks may, perhaps, suffice to show His Honor's interest in the professional aspect of forest questions, and his sense that the lasting interests of the country at large should be the recognized end of the management of waste lands as of forest conservancy in general.

As regards forest finance it cannot, His Honor thinks, be too distinctly understood that no mercantile theory of forest administration meets the conditions of the Punjab. In dealing with territories 100,000 square miles in extent, comprising 9,180,000 acres of waste land the property of Government scattered over plains and hills, and in adjusting expectations to the possibi-

lities of a department which has not been nearly 20 years at work, and which has the control of 9,300 square miles of wood land in British and Native territory, His Honor cannot too emphatically recognize the fact that now, and for many years to come, much expenditure must be capital expenditure, the return to which cannot be immediate, and will often in the sequel be indirect.

If the Punjab Forest Department for the present pays its way, this seems as much as could be expected. For it is not only in the obvious instance of artificial plantations that capital is now being laid out; demarcations, the formation of working plans, surveys, roads, compensation for lands taken up for forest purposes, and for the extinction of forest rights,—all these are properly heads in a capital account, and the charges, actual or impending, under such heads, will only yield an adequately remunerative return in a long series of future years. When the exhaustion of tracts most easily exploited—already experienced in the Simla hills—tells upon the general prices of timber and fuel, then it will be that the value of forest expenditure in the interests of the Empire will make itself sensibly felt.

7. But, as a fact, the Punjab Forest Department, under circumstances by no means favorable, has, during the years from 1871 to 1875 inclusive, not only paid its way, but can also show a profit. Statistics are given in the margin showing the net profit and loss of the department in each of these years after making allowance for the alteration in the value of stock. It appears from paragraph 136 of the Report now received that there is a tendency towards an increased preponderance of revenue over expenditure; and it is a feature of the year reported on that, whilst the expenditure is the lowest on record since 1871, the revenues stand at a higher figure than in any year during the same period. As regards the Punjab, moreover, it should be borne in mind that a heavy prime cost is paid for the revenue-yielding material* in the shape of rent and seigniorage on the Jhelum, Ravi, Chenab and Sutlej produce; this charge (which is liable to increase according to the number of fellings) amounted in 1875 to Rs. 28,350, and the income from grazing dues and sale proceeds on rakhs and forests, which hitherto has not been credited to the Forest Department, has reached the sum of Rs. 24,81,022 since 1871-72 inclusive, and averages nearly five lakhs a year. In accordance with the orders of the Government of India, all revenue derived from forests should be credited to forests, and a definite proposal is now before His Honor to treat all forest income proper, which has hitherto been credited to miscellaneous land revenue, under a separate heading in the district accounts, so that the Forest Department may be able to state the total annual return to all forests in the province. As pointed out by the Conservator in paragraphs 141, 142 of his Report, the matter has some departmental importance, because a reduction of area under the Forest Department in the plains will of course diminish their collections in grazing dues. In dealing with the forest finances of the Punjab as a whole, it seems appropriate to set the revenues from relinquished areas against the capital outlay and other necessary expenditure on strictly reserved tracts. But the question of credit to one head or another of the imperial accounts has little imperial significance. The point is that, whilst the department should look to the future for the really adequate return to its scientific labours, the tracts under district management may well be expected to produce forest revenues till they can be resigned to the plough. The question of crediting revenue from whatever source derived would not of course affect the distribution of control between the District and Forest Officers, which would be made upon considerations of a totally distinct kind.

Year.	Profit and loss.	
1870-71 ..	Surplus	... 1,00,000
1871 72 ...	Ditto	... 3,70,397
1872-73 ...	Ditto	... 39,970
1873 74 ..	Deficit	... 6,854
1874-75 ...	Surplus	... 2,44,797
1875-76 ...	Ditto	... 1,52,058

Year.	Expenditure	Revenue.	Increase or decrease.
1871 ...	7,05,329	7,35,003	+29,674
1872 ...	7,95,942	6,52,994	—42,948
1873 ...	5,97,162	7,32,539	+1,35,377
1874 ...	6,46,479	8,34,874	+1,88,395
1875 ...	5,54,226	9,05,741	+3,51,515

NOTE.—The first of the above tables gives the *net* profit or loss, and the second the *gross* receipts and charges

* Paragraph 151 of Report.

8. With reference to the relative positions of District and Forest Officers, it will be evident from much already said, that a satisfactory solution of the problem is closely connected with the demarcation and permanent assignment of selected areas to the department or to the Civil Officer respectively. This result can only be gradually attained, but the observation is here thrown out for the consideration of the Financial Commissioner and the Conservator, that it may, in some instances, be desirable for the Forest Officer to stand relatively to the District Officer in a position analogous to that now occupied by the Police Officer, as has substantially been suggested in the case of the Kángra district. One practical difficulty in extending such a measure would be that the limits of the forest divisions do not usually coincide with the limits of districts or civil divisions. In two instances, however, those of the Jhelum and Ráwalpindi divisions the district and the forest divisions do coincide, whilst in the other cases the forest divisions, though not coincident with the civil divisions, correspond with them to a considerable extent. The Plantation Division, however, is of course scattered, and one cause of want of coincidence in limit elsewhere, is that the Forest Officer's charge necessarily follows the course of the river to the depôt where his timber is marketable.

9. The Lieutenant-Governor will now follow the order of the review, making such further remarks as may seem necessary.

10. The final revision of the Chamba rules, appended to the lease noticed in the 10th paragraph, has been concluded, and Conservator has submitted for print a copy corrected in accordance with the orders of the Government of India.

11. The case regarding Thandiáni, Nathia Galli and Dunga Galli locations, referred to in paragraph 14, is awaiting a report from the Financial Commissioner as regards Nathia Galli, and the Financial Commissioner states that he has deferred reply, pending the opinion of the Commissioner of Pesháwar.

12. The case of the Muzaffargarh rakhs is under consideration.

13. Adverting to paragraph 19, the Conservator is requested to submit a report on the Gurdaspur forests through the Financial Commissioner.

14. A proposal for the settlement of the Jhelum rakhs is now before Government, and the question of the new adjustment of area, reported to be necessary in paragraph 21, is receiving attention.

15. The Murree and Kahuta tahsíls, which are alluded to in the 26th paragraph, are being surveyed by the Revenue Survey Department. Further proposals for the settlement of rights, and the best means of dealing with forest offences in these tracts, have been received.

16. With reference to paragraph 27, His Honor believes that the Conservator will find the rates he is unable to trace in the revised Kángra rules, sanctioned by Punjab Government letter No. 226, dated 25th January 1859, and printed at pages 375 to 378 of Barkley's Non Regulation Law. The Conservator can ascertain the state of the case from the Commissioner of Jullundur, who promulgated the rules in his letter No. 466-90, dated 1st March 1860.

17. The question of the Hazára forests, noted in paragraph 49, has been disposed of, and the complete report and Draft Házara Forest Regulation, have been submitted to the Government of India, as stated above.

18. The rules of 1873 for the supply of villagers in certain localities, referred to in paragraph 44, formed subject of enquiry in the Government of India's notice of the last Punjab Review. The Conservator has since reported at length upon these rules, and a reply to the remarks of the Government of India will shortly be furnished. In connection with this subject it should be noted that there is, perhaps, an error in paragraph 46, as the rules applied in the first instance to the Bhera tahsíl of the Shahpur district, and this shows that rights existed there.

19. The clerical error reported in paragraph 49, which left the Jhelum Division almost without establishment, must be fully explained by the Conservator. The Lieutenant-Governor is quite unprepared to admit that there can be any justification of the method mentioned by the Conservator of meeting difficulties of the kind indicated. The proper remedy is not to bring establishment charges under the cost of conservancy and working, but to bring such clerical errors at once to light, and to secure their rectification by proper authority.

20. The Jhelum frauds case came under His Honor's notice, and the officer responsible for the negligence displayed was duly punished. But from paragraphs 50, 51, and 56, it appears that instances of embezzlement and misappropriation are becoming of frequent occurrence amongst the subordinates of the department, and although it is satisfactory to gather from paragraph 128 that the Conservator has taken proper measures as regards the rafting system, the Lieutenant-Governor must invite his very serious attention to the necessity which obviously exists for a stronger control over the departmental subordinates. His Honor has no wish to impugn the personal efforts of Mr. Baden-Powell in this direction, but he considers that, whilst the general system of control itself is, to judge from the results which are apparent, gravely in need of thorough examination, if not of reform, no system will ever be effectual in preventing such occurrences as have now been recorded, unless all the responsible officers of the department are fully alive both to the interests of the Government and to their own duties and liabilities in the matter.

Their earnest co-operation with the Conservator is therefore urgently directed ; and it must be understood that if such frauds as have recently come to light continue to be perpetrated, His Honor will regard the circumstance as highly discreditable to the professional capacity of the officers in Divisional charge. The power of exerting sufficient control over subordinate establishments is one of the first qualifications of a good Forest Officer, and no Forest Officer who does not possess this can be regarded as efficient, however great may be his merely professional skill.

21. The suggestion made in paragraph 55 regarding a uniform for the forest subordinate staff seems a good one ; the Conservator can submit separate proposals on the subject.

22. His Honor has recently passed orders regarding the crediting of forest fines noticed in paragraph 56. He considers they should be credited to Law and Justice like fines for all other offences.

23. Adverting to the subject of paragraph 58, His Honor's orders have been frequently passed regarding magisterial powers of Forest Officers. He is, as a rule, unwilling to confer such powers on the officers in question, but exceptions are made in remote localities.

24. The report on the work in paragraph 73 discloses an unsatisfactory state of things. If European Officers cannot visit the different plantations, they should report the reason for their inability to do so, and the Conservator should take effectual measures to remove the carelessness and indifference of which he complains.

25. With reference to paragraph 79, if another Assistant is wanted for the Fuel Reserve Central Division, a separate proposal to this effect can be made. It seems intolerable that the closing of areas should be a direct source of profit to the native establishment. This, however, is acknowledged and attributed to want of European supervision.

26. In regard to the want of market for small branches from the Changa Manga plantation, which is alluded to in paragraphs 92 and 147, the Conservator is authorized to try the experiment of a depôt at Lahore, as proposed.

27. The Himalaya being the great source of timber-supply, as opposed to fuel, it seems to His Honor the worst economy to neglect the construction of slides. He accordingly entirely concurs in the spirit of the remarks which the Conservator has recorded in his 99th paragraph.

28. As regards the suggestion in paragraph 102 that it is at present undesirable to work all five rivers at once, the Government of India have already expressed their approval of this course in their recent orders on the Forest Budget.

29. The Commissioner, Jullundur, has been requested to report upon the free grants of timber upon which the Conservator has remarked in his paragraph 106.

ORDER.—Ordered that 400 copies of the Report and this review be forwarded to the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce; also that 3 copies be forwarded to the Conservator of Forests and 1 copy to Financial Commissioner, Punjab, for information.

By order of the Honorable the Lieutenant-Governor of the Punjab,

LEPEL GRIFFIN,

Officiating Secretary to Government, Punjab.

Printed at the Government Civil Secretariat Press, Lahore.

No. 1108 F.

FROM

G. H. M. BATTEN, ESQ.,

Offg. Secretary to the Government of India,

To

THE SECRETARY TO THE GOVERNMENT OF THE PUNJAB.

Dept of Revenue, Agriculture & Commerce.

Forests.

SIMLA, *the 29th August* 1877.

SIR,

I AM directed to acknowledge the receipt of your letter No. 177 F, dated the 7th May last, forwarding the annual report of the Forest Department in the Punjab for 1875-76, with a review by His Honour the Lieutenant-Governor.

2. His Honour the President in Council has read with interest the remarks recorded in paragraphs 3—5 of the orders of the Punjab Government regarding the relative importance of forest conservancy in the plains and the hill districts of the province: and cordially assents to what is said regarding the necessity of protecting forest growth in the hills, wherever denudation is likely to damage fields and pastures on the lower slopes and in the valleys; to diminish the dry weather water-supply in springs and streams; and wherever in other respects the maintenance of forests is likely to promote the future well-being of the country. These considerations should regulate the demarcation of permanent reserves, not only in the high mountains of the North-West Himalaya, but also in the Salt Range and the other lower hill ranges of the Punjab.

3. In the plains undoubtedly the chief object of forest conservancy ought to be to ensure a permanent supply of wood, grass and other forest produce, for large centres of consumption. It is understood to be the intention of the Punjab Government gradually to reduce the area of the rakhs in charge of forest officers, and to concentrate the work of the Department upon the plantations and selected areas of rakhs situated near rivers and railways or in the vicinity of large towns.

4. These proposals are generally approved, but the President in Council is of opinion that certain other considerations should not be lost sight of. The maintenance of a proportion of land stocked with trees and shrubs is doubtless necessary to provide for the requirements of the agricultural population in the plains; moreover, although no proof as yet exists of any influence upon the climate produced by large areas covered with trees in the plains, yet, on the other hand, it is not impossible that denudation in the plains may have an injurious effect upon the climate of a dry country like the Punjab. Although therefore the extension of cultivation in the plains must be the chief aim to be kept in view, yet the considerations adverted to seem to indicate the necessity of slow and cautious progress in this respect.

5. As long as the forest officers have charge of demarcated forest lands, whether in the hills or in the plains, the area of these lands should be accurately recorded in each annual progress report. In the report under review discrepancies have been noticed between the area statement recorded in page 76 and the data entered in pages 1—10 of the report. There are also discrepancies between the statement appended to the report for 1874-75 and

the data given in the present report, which are not sufficiently explained. I am directed to transmit a corrected statement prepared in this office which exhibits the discrepancies between the returns of the two reports and the changes which are reported to have taken place during the year under review.

6. The leased forests of Bussahir have been excluded from the list of demarcated reserves because paragraph 17 of the preliminary working plan of the Sutlej working circle states that these forests are not demarcated. The reserves of the Murree and Kahuta Tehsils of the Rawalpindi District have also been excluded, as it is evident from paragraph 26 of the present report, that no demarcated reserves exist in that part of the Rawalpindi District.

7. The result of the statement is—

	Square miles.
Area on 31st March 1875 according to the statement appended to Colonel Stenhouse's report	3,782
Area on 31st March 1875 according to the data given in Mr. Baden-Powell's report, after making the needful corrections ...	3,847
Area on 31st March 1876	3,700

A portion of this large area will eventually be given up for cultivation, but on the other hand, as demarcation of the forests intended to be permanently maintained progresses, additions to the area of forest reserves will doubtless be made.

8. It appears to the Hon'ble the President in Council worthy of consideration whether in those cases in which it has been finally decided permanently to maintain a Government forest, it will not be an advantage to follow the practice of other provinces, and to notify the boundaries of such reserves in the *Punjab Gazette*. In those districts to which the Government Forest Act applies, the notification would be made under Section 2 of that Act; in Hazara it would be made with reference to the Forest Regulation, and in those leased forests in which the lease gives power to demarcate reserves, the boundaries of the forests would be notified with reference to the provisions of the lease.

9. The President in Council cordially assents to what is said in paragraphs 2 and 8 of the orders by His Honour the Lieutenant-Governor regarding the necessity of establishing a closer connection between the working of the Forest Department and of the general administration of the country. One of the chief difficulties certainly is, that the limits of the forest divisions do not usually coincide with the limits of districts or civil divisions. This difficulty however is not found in all cases, and it has been overcome in other provinces where it exists to the same extent.

10. There seems to be no valid reason why the officer in charge of the leased forests in Bussahir should not be placed in a definite relation to the Superintendent of Hill States, or the Bias Forest Officer to the Deputy Commissioner of the Kangra District. The important rakhs and plantations in the Lahore District might be in charge of one officer, who would, in regard to certain matters, be subordinate to the Deputy Commissioner, and a similar arrangement might be established in the Rawalpindi and Hazara Districts, where, under the existing organization, the limits of the forest divisions more or less coincide with those of the civil districts. The organization of forest administration in the Bombay Presidency which was adopted in 1870 was based upon this plan, and a similar system has lately been introduced in the Central Provinces.

11. The chief obstacle to a general introduction of this system throughout the province will probably be found to be that it would require a larger staff of superior forest officers than is at present sanctioned. On the other hand, if district forest officers were in certain matters placed under the control of Deputy Commissioners of districts, it would perhaps be found feasible to employ junior officers in some of these charges, and in districts with a small area of rakhs and plantations, senior Forest Rangers might, in certain cases, discharge the duty of district forest officers.

12. These remarks are recommended to the attention of His Honour the Lieutenant-Governor. It is not intended to urge immediate action in this direction, but it will be found an advantage to keep a definite plan in view and to introduce it gradually as opportunity may offer.

I have the honour to be,

SIR,

Your most obedient Servant,

G. H. M. BATTEN,

Offg. Secretary to the Govt. of India.

1877

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE AND COMMERCE.

FORESTS.

To

THE SECY. TO THE GOVT. OF PUNJAB.

No. 1108*F.*

Dated Simla, the 29th August 1877.

SUBJECT.

OBSERVATIONS and orders on the progress repo of forest administration in the Punjab f 1875-76.

Govt. Central Branch Press, Simla—No. 745 R., A. C.—30-8-77—45

Corrected Area Statement of demarcated forests in the Punjab on 31st March 1875 and 31st March 1876.

Division.	Chief group or Sub-division.	Area on 31st March 1875. According to 1874-75 Report. Acres.	Area on 31st March 1875. According to 1874-75 Report. Square miles.	Area on 31st March 1875. According to 1875-76 Report. Acres.	Area on 31st March 1875. According to 1875-76 Report. Square miles.	Added during year. Acres.	Excluded or transferred. Acres.	Area on 31st March 1876. Acres.	Area on 31st March 1876. Square miles.	Remarks.
Sutlej	Bussahir	51,200	80	51,200	80	..	51,200	..	..	Not demarcated, see Sutlej Working Plan.
	Kalesar	32,000	50	32,000	50	..	..	32,000	50	
	Total Sutlej Division ..	83,200	130	83,200	130	..	51,200	32,000	50	
Beas	Hoshiarpur	15,846	25	15,847	25	..	..	15,847	25	Difference 1 acre more than 1874-75, unexplained.
	Nurpur	9,703	15	9,703	15	..	..	9,703	15	
	Dera	16,273	26	11,203	18	41	122	11,122	18	Difference explained in para. 7 of Report.
	Hamirpur	4,470	7	4,470	7	..	..	4,470	7	
	Kulu	10,261	16	9,651	15	..	..	9,651	15	Difference 610 acres less than 1874-75, unexplained.
	Seoraj and Plach	3,331	5	3,361	5	..	..	3,361	5	„ 30 acres more „ „
	Total Beas Division ..	59,884	94	54,235	85	41	122	54,154	85	
Ravi	Kalatop	3,200	5	2,870	4	..	..	2,870	4	Difference 330 acres more than 1874-75, explained in foot-note.
	Bakloh	1,280	2	1,280	2	.	..	1,280	2	
	Ravi	29,135	46	29,775	47	21 085	..	50,860	79	Difference 640 acres less than 1874-75, unexplained.
	Total Ravi Division ..	33,615	53	33,925	53	21,085	..	55,010	85	
Chenab	Pangi Valley	21,348	33	64,348	101	..	.	64,348	101	Difference 43,000 acres not finally demarcated.
	Total Chenab Division ..	21,348	33	64,341	101	..	..	64,348	101	
Jhelam	Dunga Gali	41,017	64	41,017	64	..	..	41,017	64	
	Kaghan	57,457	89	57,987	90	..	..	57,987	90	Difference 500 acres more than 1874-75, unexplained.
	Siran	20,986	33	20,986	33	..	..	20,986	33	
	Khanpur	31,786	50	31,786	50	..	..	31,786	50	
	Total Jhelam Division ..	1,51,276	236	1,51,776	237	..	..	1,51,776	237	
Rawal Pindi ..	Plains Forests	1,30,934	205	1,30,934	205	..	6,905	1,24,029*	194	* Given at p. 76 as 1,22,029 acres.
	Hill Forests	52,989	82	52,989	82	..	52,989	..	..	Excluded, see para. 26 of Report.
	Total Rawal Pindi Division ..	1,83,923	287	1,83,923	287	..	59,894	1,24,029	194	
Fuel Reserve Central ..	Lahore	2,04,338	319	2,16,912	339	..	3,113	2,13,799	334	Difference 12,574 acres more than 1874-75†.
	Amritsar	2,724	4	2,724	4	69	..	2,793	4	
	Montgomery	5,47,672	856	5,52 794	864	960	490‡	5,53,264	865	Difference 5,122 acres more than 1874-75†.
	Multan	59,958	94	59,958	94	33	21	59,979§	94	
	Muzaffargarh	1,13,955	178	1,13,955‖	178	135	4.086	1,10,004	172	† Partly, but not wholly explained in para. 18-2 of Report.
	Dera Ghazi Khan	34,129	53	34.129	53	..	2,000	32,129	50	‡ Given at p. 77 as 470 acres.
	Gujranwala	2,42,606	379	2,42,606	379	87	..	2,42,693	379	§ „ „ 77 as 55,979 acres.
	Jullunder	..	..	..	..	250	..	250	..	‖ „ „ 4 as 1,13,963 acres.
	Total Fuel Reserve Central Division ..	12,05,332	1,883	12.23,078	1,911	1,534	9,701	12,14,911	1,898	
Fuel Reserve Northern	Jhelam	3,16,117	494	3,16,117	494	..	..	3,16,117	494	
	Gujrat	53.953	84	53,953	84	..	..	53,953	84	
	Shahpur	2,85,501	446	2,85,501	446	..	..	2,85 501	446	
	Kachi	..	..	..	..	1,414	..	1,414	2	
	Total Fuel Reserve Northern Division ..	6,55,571	1,024	6,55,571	1,024	1,414	..	6,56,985	1,026	
Plantation	Changa Manga	Not separately given*	..	7,212	11	3,406	..	10,618	17	Difference of 14,459 acres, as well as the discrepancies between the statements at pp. 50, 73 and 77, respectively, unexplained.
	Lahore Sailaba			1,817	3	566	21	2,382	4	
	Outlying plantations			2,838	4	37	1,344	1,531	2	
	Rakhs under improvement			576	1	..	..	576	1	
	Total Plantation Division ..	26,902	42	12,443	19	4,029	1,365	15,107	24	
	Grand Total ..	24,21,101	3,782	24,62,499	3,847	28,103	1,22,282	23,68,320	3,700	

Govt. Central Branch Press, Simla,—No. 744 R., A. & C.—30-8-77.—450.

PROGRESS REPORT

OF

FOREST ADMINISTRATION,

IN THE

PROVINCE OF OUDH,

DURING

1875-76.

FIRST PART.

SPECIAL.

CHAPTER I.

STATE FORESTS AND LEASED FORESTS.

SECTION I.

AREAS, BOUNDARIES, DESCRIPTIVE ACCOUNT.

THE area of the forests remains the same as last year. Captain Samuells has surveyed the boundary between Bughora Tál and the Ara nala. The pillars are for the most part built on small spurs a few feet above the line that follows the base of the hills, about half a mile apart, so that one pillar can be seen from the next one; there will be no difficulty in making a road near the line, but we shall not be able to follow the line exactly, owing to the broken nature of the ground; a good deal of land has necessarily been given up to obtain the pillars being on the spurs, but the forest, except in the river beds, is not valuable on and about the line.

SECTION II.

REQUIREMENTS OF THE SURROUNDING POPULATION, PRESCRIPTIVE RIGHTS.

2. Captain Pitcher, Judge of the Small Cause Court, Lucknow, was associated with me in the special commission for enquiring into the requirements of the surrounding population. Captain Pitcher takes such very different views of the subject to what I do, that it was not possible to write a combined report, so that he has sent in his report and I have sent in mine, which enters fully into a number of questions raised.

SECTION III.

PROTECTION.

3. The fire conservancy has been continued in the Dudua Home block, the Charda Forests, and Block No. 2 in the VII. Section Bahraich.

4. The two former escaped fire, a portion of Block No. 3 was fired, which was duly reported on in this office No. 11, of 11th May 1876.

5. The parts protected from fire are looking very well, the protected part of the sissoo block to the south-east of Dudua has made very rapid improvement, the sissoo, self-sown by the stream near the banks, having been protected for several years, has in some places got well above the grass, killing it down. I have seen no natural reproduction of sissoo or khair except where the seed has been water-sown and silt-covered.

6. Portions of the forest in other parts were also saved from fire, but I have not mentioned them in the appendix, as they do not form part of any complete scheme as the three abovementioned portions do.

7. The Bahraich sissoo plantation was fired when arrangements were being made to protect it, but as I do not think that it would ever pay, I have abandoned it, and cannot recommend any new plantations being made till they can be properly looked after during the most dangerous, *viz.* the hot dry season.

SECTION IV.

Management and Improvement.

8. The usual selection fellings took place in the Kheri division, they started where last year's work left off, crossed over into Block No. 6 of Revenue Survey Map, and ended in Block No. 14.

9. The trees are rather small, but are pretty straight and sound.

10. A very small portion of work was carried on in the improvement fellings.

11. Where the improvement felling has taken place, the young forest is looking very well indeed. Owing to the prices, we cannot make much, if anything, out of the improvement fellings, and as, besides, we are under-officered, we must confine ourselves to a very small area. The small plantation of bamboos near Dudua has been nearly rooted out by pigs, so that it is not of any use sowing any more.

12. The Bahraich sissoo plantation being destroyed we have no plantations. We have plenty of sál, we must at present look to the future supply of sissoo from self-sown waterside natural reproduction.

13. The roads in the forests were kept in good order and were much used. I am glad to say that a large number of pucca wells has been completed on the roads in the Kheri division. They enable people to live in the forests and search well for dead fallen timber, the benefit of this will be seen in the large amount realized from dead and fallen timber in the Kheri division.

14. The rest-houses at Sathiana and Khairigarh have been completed.

15. The improvement in the forests, particularly in the Dumar, near Dharmapur, Chakkia, Chardá, and the 4th Section of the Gonda division, are worth seeing; there is good young growth in several parts of the Kheri division.

SECTION V.

Yield and Working.

16. The annual yield was the same as usual by departmental agency, but the yield from dead fallen timber was about three times the amount taken out by departmental agency.

17. In order to get some fuel into the market, I ordered about 50,000 maunds to be collected in the north-west portion of the Bahraich division; this was all collected at the river bank, and is now in course of transit to Bahramghat.

18. During the year we sold 58,227 cubic feet of timber, of which 20,538 cubic feet were in the log, the rest, *viz.* 37,689 cubic feet, were in scantlings.

19. The report of Saw Machinery forms the subject of another communication.

20. The Department of Public Works Oudh Local have sent in all their indents to the Forest Department, and are, I believe, satisfied with the work turned out, but the provincial works are so small that they do not take anything like our out-turn. We have supplied large quantities of timber to Military Works in the North-Western Provinces, but the Military Works at Lucknow and Fyzabad get all their timber through native contractors, which seems to be a curious arrangement, as we could supply them cheaper. I am coming to the conclusion that we should either supply all the Government Departments or should retire from the work, and let the native contractors do the work, we only supplying the raw material; we cannot work so cheaply as the native merchants, and besides they can make sales and get timber passed which we cannot. The advantages in selling on indent is the certainty of revenue, but we do not clear so much profit; the Department Public Works, however, reap the benefit, I think, in getting better timber.

SECOND PART.

GENERAL.

CHAPTER I.

Financial Results.

21. The revenue during the year was:	Rs.	2,94,658	3	0
and the expenditure	„	1,98,415	8	2
giving a surplus of	„	96,242	10	10
But the net surplus of the year was as shown by the Form 28	„	1,03,991	4	10
The sanctioned budget estimate was to give a surplus of	„	1,18,000	0	0
and the regular budget estimate a surplus of	„	97,000	0	0

22. A statement showing the chief causes of the differences of revenue and expenditure was forwarded with this office No. 39, of 29th July 1876. One of the great causes in the difference was the refunding of Rs. 14,000 to the Government of Bengal on account of canoes which were supplied in 1874-75.

23. The financial results to the end of the year are as under :—

Year.	Conservancy.	Working.	Total Conservancy and working.	Establishment.	Grand Total.	Revenue.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As P.	Rs. As. P
To end of ...						
1874-75 ...	2,26,226 14 5	6,90,286 13 5	9,16,513 11 10	4,44,187 10 11	13,60,701 6 9	18,74,053 12 8
1875-76 ...	20,870 10 5	1,28,079 7 7	1,48,950 2 0	49,465 6 2	1,98,415 8 2	2,94,658 3 0
Total ...	2,47,097 8 10	8,18,366 5 0	10,65,463 13 10	4,93,653 1 1	15,59,116 14 11	21,68,711 15 8

Deduct,—Expenditure Rs. ...		15,59,116 14 11
Gives a Surplus of ,, ...		6 09,595 0 9
With assets amounting to ,, ...		* 2,61,542 0 11
Grand Total ,, ...		8,71,137 1 8
* Stock ... ... ,, ...		2,12,125 14 10
Outstandings	Rs. 9,919 1 2 ,, 50,298 2 1 ,, ...	60,217 3 3
		2,72,343 2 1
Liabilities	Rs. 8,647 13 4 ,, 2,153 4 10 ,, ...	10,801 1 2
Assets ... ... ,, ...		2,61,542 0 11

of which Rs. 22,701-5-2 is considered irrecoverable ; this has been applied for to be written off to Profit and Loss.

24. To give a larger revenue we want more European supervision ; it was formerly thought that the forests wanted rest. There are many places in which more timber could be taken out with advantage to the forests, but more harm than good would arise if it were done in an improper manner.

25. The Government of India wanted to know the results of timber operations for the past five years. This I give below :—

Years.	Expenditure A.	Share of B.	Total Expenditure.	Revenue.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
1871-72. ...	49,851 11 6	11,817 5 4	61,669 0 10	49,014 10 6
1872-73. ...	59,154 11 4	14,054 11 7	73,209 6 11	1,36,609 14 6
1873-74. ...	69,513 12 3	12,064 0 0	81,577 12 3	1,56,682 0 5
1874-75. ...	1,00,749 4 7	11,666 8 7	1,12,415 13 2	1,34,423 15 0
1875-76. ...	1,00,978 4 0	12,366 5 6	1,13,344 9 6	1,31,954 2 5
Total ...	3,80,247 11 8	61,968 15 0	4,42,216 10 8	6,08,684 10 10

I have added one-fourth of establishment as recommended by the Inspector General in review of forest administration of 1873-74, dated 15th November 1875.

26. This includes fuel operations, which were carried on at about cost price, and also includes the cost of making 110 large boats, about Rs. 350 each, which are not brought on the value of stock, some carts, and the timber of five rest-houses; and the value of stock which on the 1st April 1871

was Rs. 2,35,848, which included timber in transit, was Rs. 2,12,125-14-10 on the 31st March 1876, which is nearly the same, timber in transit not being included in the latter valuation.

27. With reference to the cost of improvement fellings, the stock from them gets mixed up with the other stock, and it is difficult to give an exact detail of expenditure and income, but if the stock could be sold on the spot, as it might be, a correct idea of the income and expenditure might be arrived at.

CHAPTER II.

General Remarks.

28. The officers were in camp as below :—

Captain Wood	...	...	...	10	months.
Mr. Ponsonby	...	...	...	7¼	,,
Mr. Dodsworth	...	...	...	9½	,,
Mr. Wilmot	...	...	...	8¼	,,

29. With reference to Mr. Ponsonby's charge I cannot report much progress, except in the growth of forest formerly remarked on. The charge is too large. Gonda had to be neglected. Mr. Ponsonby, however, managed to protect the Charda forest from fire.

30. Mr. Dodsworth, as usual, carried on all his works with his usual ability and perseverance, in spite of being short-handed, Mr. Wilmot having been for a good part of the working season at Bahramghat.

31. Mr. Wilmot has worked well, and deserves his promotion to Assistant Conservator 2nd Grade, and as I see that his immediate seniors on the general list have obtained their promotion, I trust that he will not be passed over; he has passed all the examinations necessary, and is fit to take charge of a division. He has carried out the work entrusted to him with skill and ability.

32. Mr. Downes, Mechanical Engineer, on his time expiring, returned to England.

33. Babu Kunhya Lal, of the Direction office, Bankey Lal, of the Kheri office, Dowlat Rai of the Bahraich office, and Rangers Kasim Khán and Amanat-ul-la Khán, deserve favourable mention; as also does Forest Apprentice Duffadar Husain Shah.

34. The Chief Commissioner (Sir George Couper) visited the forests, and I regret that he being absent cannot give his opinion of them, but I believe he was satisfied with what he saw.

E. WOOD, Captain,
Conservator of Forests, Oudh.

Lucknow:
11*th September* 1876.

No. 21.

FOREST DEPARTMENT, OUDH.

ANNUAL SUMMARY OF REVENUE AND EXPENDITURE IN THE DIFFERENT DIVISIONS DURING 1875-76.

Classifications.	Direction.	Kheri division.	Bahraich division.	Gonda division.	Total.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
RECEIPTS.					
I.—Revenue from wood and bamboos.					
1. Brought to depôt by departmental agency—					
(a.) Timber and bamboos	...	1,06,758 11 3	1,862 5 6	...	1,08,621 0 9
(b.) Firewood and charcoal	...	23,333 1 8	...	...	23,333 1 8
(c.) Sandal wood	...	...	...	...	...
2. Wood and bamboos removed from the forests by purchasers, license-holders and permit-holders—					
(a.) Timber and bamboos	...	71,973 15 3	43,471 14 3	8,094 11 6	1,24,440 9 0
(b.) Firewood and charcoal	...	543 0 7	304 14 5	846 3 0	1,694 2 0
3. From confiscated, drift and waif wood ...	...	30 0 0	2,874 8 0	1 4 8	2,905 12 8
II.—Revenue from minor produce.					
1. Grazing dues and sale of grass	...	13,693 8 9	11,398 0 7	334 8 4	25,426 1 8
2. Other minor produce	...	936 4 4	1,050 14 3	272 15 5	2,260 2 0
III.—Duty on produce of foreign or private forests imported into British Territory.					
1. On wood	...	...	...	...	...
2. On other forest produce	...	...	...	...	...
IV.—Miscellaneous.					
1. From fines and forfeitures	...	135 2 7	65 2 0	...	200 4 7
2. From refunds to the Department	...	2,790 5 8	147 0 10	...	2,937 6 6
3. From other sources	...	1,063 8 9	1,628 4 5	147 13 0	2,839 10 2
Total receipts ...	...	2,21,257 10 10	62,803 0 3	10,597 7 11	2,94,658 3 0
EXPENDITURE.					
A.—Conservancy and works.					
I.—Cost of timber operations.					
1. Brought to depôt by departmental agency—					
(a.) Timber and bamboos	...	85,910 1 8	3,150 5 4	...	89,060 7 0
(b.) Firewood and charcoal	...	11,917 13 0	...	...	11,917 13 0
(c.) Sandal wood	...	...	...	...	...
2. Wood and bamboos removed from the forests by purchasers, license-holders, and permit-holders—					
(a.) Timber and bamboos...	...	234 1 1	478 12 0	53 4 0	766 1 1
(b.) Firewood and charcoal	...	...	...	...	...
3. On confiscated drift and waif wood ...	...	...	1,576 14 0	...	1,576 14 0
II.—Cost of collecting minor produce.					
1. Grazing and sale of grass	...	920 1 5	1,988 8 5	326 2 5	3,234 12 3
2. Other forest produce	...	76 13 2	221 6 5	...	298 3 7
III.—Cost of forest organization.					
1. Demarcation lines and boundary pillars or marks	...	1,062 8 6	258 2 5	...	1,320 5 11
2. Working plans	...	...	...	...	..
3. Surveys	...	...	...	...	...
IV.—Cost of the treatment and creation of forests.					
1. Natural forests—					
(a.) Protection from fire	...	1,176 6 8	3,045 7 3	80 0 0	4,301 13 11
(b.) Fencing and enclosing	...	5 15 0	450 8 10	...	456 7 10
(c.) Improvement and conservation ...	...	1,285 4 11	110 12 9	286 12 3	1,682 13 11
(d.) "Reboisment" or restoration of denuded areas	...	16 7 3	...	...	16 7 3
Carried forward Rupees	...	1,02,605 3 8	11,280 13 5	746 2 8	1,14,632 3 9

No. 21.—(*Continued.*)

Classifications.	Direction.	Kheri division.	Bahraich division.	Gonda division.	Total.
EXPENDITURE.—(*Continued.*)	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
Brought over Rupees ...	...	1,02,605 3 8	11,280 13 5	746 2 8	1,14,632 3 9
2. Artificial forests—					
(*a.*) Formation	...	...	...	...	...
(*b.*) Protection from fire	...	...	...	...	...
(*c.*) Improvement and conservation ...	...	...	...	...	...
(*d.*) Fencing and enclosing	...	...	...	...	...
V.—Rent of leased forests.					
VI.—Cost of collecting duty on produce of foreign or private forests imported into British Territory.					
VII.—Works of utility for the development of forests.					
1. Roads and bridges	...	4,422 6 0	1,238 12 5	1 0 0	5,662 2 5
2. Buildings and offices	...	5,188 14 7	747 9 6	173 7 6	6,109 15 7
3. Compensation for land taken up for forest purposes, or for extinction of forest rights...	...	...	...	...	...
4. Other works	...	948 8 1	364 1 6	7 14 0	1,320 7 7
VIII.—Cost of departmental cattle.					
1. Purchase of stock	...	...	...	...	...
2. Hire of stock	...	...	...	...	...
3. Feed and keep of cattle	...	3,633 0 7	511 0 2	...	4,144 0 9
IX.—Cost of departmental plant and tools.					
1. For timber and wood operations	...	634 15 2	...	...	634 15 2
2. For other purposes	...	1,177 2 0	309 6 6	31 13 6	1,518 6 0
X.—Miscellaneous charges.					
1. Refunds	...	115 9 6	14,100 0 0	...	*14,215 9 6
2. Law charges	...	76 15 8	5 7 0	...	82 6 8
3. Other charges	...	296 14 2	250 11 5	82 5 0	629 14 7
Total of A, Conservancy and works ...	...	1,19,099 9 5	28,807 13 11	1,042 10 8	1,48,950 2 0
B.—Establishments.					
I. Salaries	10,027 2 7	16,552 2 4	9,929 3 2	1,631 10 9	38,140 2 10
II. Travelling allowances	3,003 0 6	3,796 0 2	2,289 9 0	318 14 3	9,407 7 11
III. Contingencies	325 6 6	806 8 11	525 15 2	259 12 10	1,917 11 5
Total of B, Establishments ...	13,355 9 7	21,154 11 5	12,744 11 4	2,210 5 10	49,465 6 2
Grand total expenditure Rs. ..	13,355 9 7	1,40,254 4 10	41,552 9 3	3,253 0 6	1,98,415 8 2

* Rs. 14,215-9-6 is debited in the books of the Accountant General's Office under the head 3, Refunds and Drawbacks.

LUCKNOW:
The 2nd June 1876.

Examined and found correct
(Sd.) C. J. OTWAY MAYNE,
Assistant Accountant General, N. W. P.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh.

No. 22.

FOREST DEPARTMENT, OUDH.

Dr. ANNUAL ABSTRACT ACCOUNT OF THE CASH TRANSACTIONS OF THE FOREST DEPARTMENT, IN THE YEAR 1875-76. **Cr.**

Year.	Heads of Account.	Amount. Rs. A. P.	Year.	Heads of Account.	Amount. Rs. A. P.
1875-76.	To Cash Balance in hand on 1st April 1875	41,238 9 1	1875-76	By expenditure of the department :—	
	„ Revenue received	2,94,658 3 0		A.—Conservancy and works	* 1,48,950 2 0
	„ Remittances from public treasuries	1,54,112 9 3		B.—Establishments	49,465 6 2
	„ Advances recovered	2,07,338 7 3		Total	1,98,415 8 2
	„ Suspense Account recovered	10,007 11 5		„ Remittances into public treasuries	1,96,558 2 5
	„ Deposits received	8,260 0 6		„ Advances made	2,10,471 15 2
	„ Subscription and fees of Uncovenanted C. S. F. P. Fund	384 5 0		„ Suspense Account	7,513 8 1
	„ Transfer from divisions	41,757 14 11		„ Deposits repaid	7,988 7 7
	„ „ from Superintendent Roorkee Workshops	57 14 0		„ Transfer to divisions	41,757 14 11
	„ „ from P. W. D. Oudh, Sitapur and Lucknow Provl. Divisions ...	447 8 2		„ Book transfer to Public Works Department	30,450 5 8
	„ „ from Superintendent Stationery Calcutta...	2 6 0		„ „ „ to Ordnance „	52,587 1 7
	„ Value of Medicines supplied by Military Department, Bengal	208 0 10		„ Profit and Loss	1,645 4 8
	„ Credit of Government India on account 800 canoes supplied during 1874-75, *vide* Accountant General's No. $\frac{CA}{11436}$, dated 11th January 1876	14,000 0 0		Total Expenditure	7,47,388 4 3
				Cash Balance on 31st March 1876	25,085 5 2
	Total Rupees ...	7,72,473 9 5		Total Rupees ...	7,72,473 9 5

* Of this Rs. 14,215 9 6, debited in the books of the Accountant General's Office under the head 3, Refunds and Drawbacks.

LUCKNOW :
The 2nd June 1876.

Examined and found correct
(Sd.) C. J. OTWAY MAYNE,
Assistant Accountant General, N. W. P.

[illegible]WOOD, CAPTAIN,
Conservator of Forests, Oudh.

No. 23.

FOREST DEPARTMENT, OUDH.

ANNUAL STATEMENT OF OUTSTANDINGS AND LIABILITIES OF THE DEPARTMENT ON ACCOUNT OF CONTRACTORS AND DISBURSERS, DURING 1875-76.

Value of timber stock.

												Rs.	As.	P.
KHERI DIVISION.														
Logs, Soheli Depôts	4,668	@ 40 cubic feet,	@ 0 6 0	per cubic foot,	70,020 0 0									
„ „ „	58	@ 40 „	@ 0 8 0	„	1,160 0 0									
„ Bahramghat Depôt, Sal	804	@ 50 „	@ 1 0 0	„	40,200 0 0	..	..	..	..			1,20,813	2	0
„ „ „ Asania ..	546	@ 45 „	@ 0 6 0	„	9,433 2 0									
„ „ „ and Huldoo ..	13													
In transit	270													
Total ..	6,359													
Sal sleepers, Bahramghat Depôt ..	614	= c. ft. 2,130·58	@ 0 8 0	„	1,065 4 7									
„ scantlings, „ „ ..		= „ 32,267·67	@ 1 4 0	„	40,334 9 3									
„ „ Soheli „ ..		= „ 6,568·62	@ 1 0 0	„	6,568 9 11	..	..	..	..			67,965	9	4
Inferior timber, Bahramghat „ ..		= „ 60,695·74	@ 0 5 3	„	19,997 1 7									
Sal offcuts, „ „ ..		= mds. 3,579·50	@ 16 0 0	per 100 mds.	572 11 6									
Firewood, „ „ ..		= „ 26,513·0	@ 16 0 0	„	4,242 1 3	..	..	..	..			4,814	12	9
Charcoal, „ „ ..		= „ 1,788·25	@ 40 0 0	„	715 4 9	..	..	..	..			715	4	9
Bullees, „ „ ..	1,897	= „ ..	@ 0 2 0	each	..	..	..	..	..			237	2	0
BAHRAICH DIVISION.														
Canoes, ...	879		@ 20 0 0	each	..	..	..	..	..			17,580	0	0
										Total value	.. ..	2,12,125	14	10

	Rs.	As.	P.
Value of stock, 1875-76, as above	2,12,125	14	10
„ „ 1874-75 „ „	2,07,793	13	0
Increase in value	4,332	1	10

Besides this, 8 large boats and 102 canoes have been added to working stock, and 270 logs in transit, of which 254 have reached Bahramghat since 1st April 1876, and fuel and charcoal at Soheli depôts have not been valued.

No. 23.—(*Continued.*)

Division.	Department debtor.			Department creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
KHERI.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
OUTSTANDINGS ON ACCOUNT OF SALES.								
Mohesh Chunder, timber merchant ..	..	2,400 0 0	2,400 0 0	2,400 0 0	..	2,400 0 0	..	..
Executive Engineer, Sitapur Provincial Division, Public Works Department, Oudh ..	5,956 2 5	11,505 13 5	17,461 15 10	..	8,920 5 10	8,920 5 10	..	8,541 10 0
Purchasers of timber	23 13 4	406 6 0	430 3 4	324 0 0	9,087 1 0	9,411 1 0	9,087 1 0	106 3 4
Executive Commissariat Officer, Lucknow, (firewood)	..	..	..	..	674 8 0	674 8 0	674 8 0	..
Executive Engineer, Military Works, Lucknow, (charcoal)	..	..	..	..	157 8 2	157 8 2	157 8 2	..
Total ..	5,979 15 9	14,312 3 5	20,292 3 2	2,724 0 0	18,839 7 0	21,563 7 0	9,919 1 2	8,647 13 4
EXCESS PAYMENTS TO CONTRACTORS.								
Kheri division, old account, (bad debts) ..	..	..	..	19,986 12 10	..	19,986 12 10	19,986 12 10	..
Ditto new ditto (carters) ..	..	7,488 14 11	7,488 14 11	8,671 10 7	8,441 3 10	17,112 14 5	9,623 15 6	..
Ditto ditto (rafting contractors)	20 0 0	..	20 0 0	6,494 2 8	..	6,494 2 8	6,494 2 8	20 0 0
Ditto ditto (other contractors)	1,069 7 3	22,625 14 6	23,695 5 9	2,198 14 9	33,556 5 3	35,755 4 0	14,193 3 1	2,133 4 10
Total ..	1,089 7 3	30,114 13 5	31,204 4 8	37,351 8 10	41,997 9 1	79,349 1 11	50,298 2 1	2,153 4 10
ADVANCES TO FOREST SUBORDINATES FOR WORKS.								
Direction	..	0 6 0	0 6 0	199 11 0	185 10 7	385 5 7	384 15 7	..
Kheri Division	..	1,51,579 1 0	1,51,579 1 0	5,576 15 0	1,57,802 3 9	1,63,379 2 9	11,800 1 9	..
Bahraich	6 4 6	52,246 7 4	52,252 11 10	5,355 9 2	48,307 7 3	53,663 0 5	1,860 13 10	450 9 3
Gonda	..	13,525 4 0	13,525 4 0	1,868 2 4	11,690 1 8	13,558 4 0	33 0 0	..
Total ..	6 4 6	2,17,351 2 4	2,17,357 6 10	13,000 5 6	2,17,985 7 3	2,30,985 12 9	14,078 15 2	450 9 3
Total outstandings and liabilities ..	..	..	..	..	..	..	74,296 2 5	11,251 11 5

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh.

No. 24.

FOREST DEPARTMENT, OUDH.

QUANTITY AND VALUE OF STOCK IN HAND AT DEPOTS AT THE COMMENCEMENT AND CLOSE OF THE YEAR 1875-76.

Description of stock.	In Depôts on 1st April 1875.					In Depôts on 31st March 1876.					Remarks.
	Pieces.	Average.	Cubic feet.	Rate.	Value.	Pieces.	Average.	Cubic feet.	Rate.	Value.	
		Cub. ft., &c.		Per cub. foot, &c.	Rs. As. P.		Cubic feet, &c.		Per cubic foot, &c.	Rs. As. P.	
Logs	7,003	40′	2,80,120′	1 and 0-8-0	1,55,580 0 0	6,359	40′, 45′, & 50′	2,54,395′	0-6-0, 0-8-0 and 1	1,20,813 2 0	* *See* Form No. 23, report 1875-76.
„ Pieces	810	15′	12,150′	0-8-0	6,075 0 0	...	...	...	...	...	* *See* Form No. 27, report 1875-76.
Sleepers (Sál) ...	...	...	...	...	...	614	3·46 each	2,130·58	0-8-0	1,065 4 7	
Scartlings (do.) ...	See c. ft.	...	17,038·42	1-0-0	17,038 6 8	...	cubic feet.	6,568·62 32,267·67	1-0-0 1-4-0	6,568 9 11 40,334 9 3	
Do. Inferior timber...	...	...	...	...	...	...	ditto	60,695·74	0-5-3	19,997 1 7	
Offcuts (Sál) ...	...	...	...	...	...	...	maunds.	3,579·50	@ 16 per 100 mds.	572 11 6	
Bullees	1,872	...	...	@ 0-2-0 each	234 0 0	1,897	...	...	@ 0-2-0 each	237 2 0	
Firewood	...	maunds.	1,20,500 64,415	@ 16 per 100 mds.	10,306 6 4	...	maunds.	26,513	@ 16 per 100 mds.	4,242 1 3	75,000 maunds firewood not brought to value, being on banks of rivers.
Charcoal	...	...	...	...	...	...	ditto	1,788¼	@ 40 per „	715 14 9	
Canoes	928	...	...	@ 20 each	18,560 0 0	879	...	...	@ 20 each	17,580 0 0	
				Total Rupees ...	2,07,793 13 0				Total Rupees ...	2,12,125 14 10	

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

No. 25.

FOREST DEPARTMENT, OUDH.

STATEMENT OF TIMBER BROUGHT TO DEPOTS FROM THE DIFFERENT FOREST DIVISIONS DURING 1875-76.

Name of division.	Forest.	Description of timber.	Pieces	Cubic feet.	Total of each division.		Timber expenses.	Add share of establishment.*		Total amount expended.	Average amount paid per log, &c.	Average cubic contents per log, &c.	Average amount paid per 100 cubic feet.	Remarks.
					Pieces.	Cubic feet.		Divisional.	Direction.					
							Rs.	Rs.	Rs.	Rs.	Rs. A. P.		Rs. A. P.	
Kheri division ...	Kheri forests	Sál logs ...	3,486	1,39,440	3,486	1,39,440	85,743	4,636	2,824	93,203	26 11 9	40	66 13 5	
" " ..	"	Sál scantlings	...	443·61	...	443·61	167	9	6	182	0 6 6 per cubic foot	...	40 10 0	Price of log not included.
" " ...	"	Miscel. Bullo[illegible]	1,015	...	1,015	...	...	...	...	...	...	...	...	
" " ...	"	Sál off cuts ...	Maunds	3,579½	Maunds	3,579½	11,918	644	394	12,956	...	...	...	
" " ...	"	Firewood ...	...	9,917	...	9,917								
Bahraich " ...	Bahraich forests	Canoes ...	...	...	...	...	3,150	6,372	104	9,626	...	...	...	
						Total	1,00,978							

* One-fourth of establishment has been charged to timber expenses as recomme[illegible] General's Review of Forest Administration, 1873-74, dated the 15th November 1875.

E. WOOD, Captain,
Conservator of Forests, Oudh.

No. 26.

FOREST DEPARTMENT, OUDH.

STATEMENT SHOWING THE AMOUNT REALIZED ON ACCOUNT OF THE DIFFERENT CLASSES OF TIMBER SOLD DURING 1875-76.

Divisions.	Number of logs, &c, sold.	Cubical contents.	Amount realized and due on account of timber, &c., sold.	Average amount per log, &c	Average cubical contents of each.	Average amount per 100 cubic feet, &c	Remarks.
KHERI DIVISION.			Rs. As. P.	Rs. As. P.		Rs. A. P.	
By selection at Bahramghat depôt logs	162	10,793·56	21,587 1 7	133 6 3	66 69	200 0 0	
„ private sale at „ „ „	10	600·98	901 7 6	90 2 4	60 09	150 0 0	
„ „ „ at Sathiana „ „	179	8,783 15	3,475 15 0	19 6 8	49 08	39 9 0	
„ „ „ at Shitaba „ „	9	360 00	90 0 0	10 0 0	40 00	25 0 0	
On Indents of D. P. W., &c, at Bahramghat, in Oudh and N.-W. P., &c., (sál scantlings) ...	.....	29,502 02	69,795 3 9	2 5 10	... .	236 7 4	Sál 29,502 02 Asna 2,881·10
„ „ of „ &c, at „ „ „ (asna „) ...	.....	2,881·10	4,005 11 3	1 6 2	.....	138 8 8	1,878 00 215·11
By private sale at „ to native purchasers, (sál „) ...	.....	1,878 00	4,316 15 3	2 4 9	... ..	229 11 0	1,374 82 1,838 21
„ „ „ at „ to „ „ (asna „) ...	.....	215 11	242 0 1	1 2 0	.....	112 8 0	
On Indents of D. P. W, Oudh Sitapur Provincial Division at Sathiana, (sál „) ...	.....	1,374·82	2,405 14 10	1 12 0	.....	175 0 0	32,754 84 4,934·42
„ „ of „ „ „ „ „ „ (asna „) .	... .	1,838 21	1,378 10 5	0 12 0	.....	75 0 0	
By sale of 3 large boats and 12 canoes to P. W. D., Oudh, &c, ... (boats)	15	... .	2,485 4 0	.....	.....	. ...	Including Rs. 499-14-8, hire of boats from Public Works Department, Oudh.
„ „ of bullies at Bahramghat depôt, ... (bullies)	246	.....	56 8 0	... .	... .	.. ...	
„ „ of cart, cart wheels and dussees at Dudua &c, ... (Cart)	1	.....	44 8 0	.....	.....	.....	
(pair wheels and dussees)	2	... ..					
„ „ of offcuts and refuse at depôts. ... . (offcuts &c)	.... .	.....	1,185 11 0	.. ...	.....	.....	
„ „ of firewood to Public Works Department, Railway, &c., ... (firewood)	Mds1,19,268 3/5	.....	24,007 9 8	. ...	.....	...	
				Per maund		Per 100 mds.	
„ „ of charcoal to Executive Engineer, Military Works, Lucknow, ... (charcoal)	Mds. 207¼	.....	157 8 2	0 12 2	.....	76 0 0	
„ Excess payments for timber from purchasers	.....	.....	3,550 13 7	.. ...	.....	.....	
BAHRAICH DIVISION.							
				Per canoe			
By sale of canoes to native purchasers, &c., ... (canoes)	49	.....	1,862 5 6	37 3 0	.....	.....	Including Rs. 40, hire of canoes at Goolra ferry.

Total amount realized	1,41,549 3 7	
Deduct amount due but not realized during the year ...	9,919 1 2	See detail form No. 28.
Balance	1,31,630 2 5	
Add amount realized on account of former years	324 0 0	
Total revenue	1,31,954 2 5	

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

No. 27.

FOREST DEPARTMENT, OUDH.

ANNUAL TIMBER ACCOUNT FOR THE YEAR 1875-76.

Description.	In hand on 1st April 1875.	Received from the forests.	Received from stock.	Total.	Sold.	Lost or used on works or stock *	In hand on 31st March 1875.	Total.	REMARKS.
Logs	7,003	3,486	1	10,490	360	3,771	6,359	10,490	
„ pieces	810	.....	.....	810	.....	810	.....	810	
Sleepers (sál)	.....	.....	614	614	.....	.....	614	614	Mohesh Chunder.
Scantlings (sál) .. .. cubic feet	17,038·42	443·61	54,109·10	71,591·13	32,754·84	.....	38,836·29	71,591·13	
„ (asna) ... ... „	.....	.....	4,934·42	4,934·42	4,934·42	.....	.....	4,934·42	
Inferior timber scantlings ... ... „	.....	.....	60,695·74	60,695·74	.....	.....	60,695·74	60,695·74	
Offcuts (sál) ... . „	.....	3,579·50	.....	3,579·50	.....	.....	3,579·50	3,579·50	
Bullees	1,872	1,015	.....	2,887	246	744	1,897	2,887	
Firewood ... ... maunds	1,84,915	9,917	.....	1,94,832	1,19,268 3/5	49,050 2/5	26,513	1,94,832	
Charcoal ... ... „	.....	.....	2,000	2,000	207¼	4½	1,788¼	2,000	
Large boats	.....	.....	11	11	3	†8	.....	11	† Kept for works.
Canoes	928	.....	114	114	12	‡102	.....	114	‡ Do do.
			.....	928	49	.....	879	928	See value of timber stock, form No. 23.
Cart, cart wheels and dussees	.....	.....	1 cart. 1 pair wheels & dussees.	.....	Sold.	.....	.....	1 cart 1 pair wheels & dussees	
Hire of large boats and canoes	.....	.....	.....	.....	.....	.....	.....	.....	See remark in form No. 26.

	Logs.	Pieces.	Bullees.	Firewood.	Charcoal.	Boats.	Canoes
* Used in stock, rest houses and works &c.	3,433	810	744	...	...	8	102
Lost in Kauriala 5, in Suheli 5, rotted away 2	12	...	...	...	...	...	...
Used for making charcoal	74	...	...	...	...	...	...
Used for making charcoal 40,563 2/5 maunds, burning bricks 5,000 maunds, saw mill 3,487 maunds	...	...	...	49,050 2/5	...	...	...
Used at saw mill 3½ maunds. and sent to Major Holmes as specimen one maund	...	...	...	...	4½	...	...
Rejected as unserviceable and sold as refuse	252	...	...	...	...	...	...
Total ...	3,771	810	744	49,050 2/5	4½	8	102

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh.

No. 28.

FOREST DEPARTMENT, OUDH.

ANNUAL ACCOUNT OF FOREST REVENUE FOR THE YEAR 1875-76.

Receipts.		Amount	Disbursements	Amount.
Amount of Revenue realized in 1875-76		2,94,658 3 0	Amount disbursed in 1875-76	1,98,415 8 2
Deduct :—			*Deduct :—*	
Amount realized on account of previous periods		324 0 0	Amount disbursed on account of transactions of former periods ...	0 0 0
Balance ..		2,94,334 3 0	Balance ..	1,98,415 8 2
Add :—			*Add :—*	
Outstandings on account of the year	9,919 1 2		Amount due for transactions during the year under review but not yet disbursed	2,603 14 1
Deduct Liabilities	3,574 10 11	6,344 6 3	Real cost of the year's transactions	2,01,019 6 3
Value of the year's transactions		3,00,678 9 3		

Value of the year's transactions	3,00,678 9 3
Cost of the year's transactions	2,01,019 6 3
Balance ...	99,659 3 0
Add difference between the value of Stock at the commencement and close of the year	4,332 1 10
Net results of the year	1,03,991 4 10

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

Detailed list of amount due for transactions during the year 1875-76, but not yet disbursed. Supplementary to Form No. 28.

Name of contractor or disburser.	Amount due.	Budget head.	Remarks.
	Rs. A. P.		
KHERI DIVISION.			
RAFTING CONTRACTORS.			
Dya Ram Gooria	20 0 0	AI, 1, (*a*)	Excess value of work done.
OTHER CONTRACTORS.			
Madho Prasad and Moolchund	2,133 4 10	AI, 1, (*b*)	Account not yet adjusted.
BAHRAICH DIVISION.			
FOREST SUBORDINATES.			
Abul Hussan, Forest Ranger...	450 9 3	Revenue	Excess recovery.
Total Rupees ...	2,603 14 1		

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

Detailed list of registration, outstandings and other deductions on account of transactions during 1875-76. Supplementary to Form No. 28.

	Amount realized, &c.	Budget head.	Remarks.
KHERI DIVISION.			
OUTSTANDINGS ON ACCOUNT OF TIMBER SALES.	Rs. As. P.		
Executive Engineer, Fyzabad Provincial Division, Public Works Department, Oudh ..	795 13 6	I, 1, (a)	
" " Rae Bareli " " " " " " ..	452 14 8	"	
Assistant " Lucknow Sub-Division " " " " ..	773 14 5	"	
Executive Commissariat Officer, Lucknow	277 13 8	"	
Superintendent Central Prison, Benares	2,382 11 9	"	
Executive Engineer, Military Works, Allahabad	2,953 8 7	"	
Native purchasers, Chotay Lal, contractor	495 2 5	"	Since realized.
" Daibideen of Lucknow	164 15 10	"	"
" Narain Dass of Cawnpore, ...	341 12 2	"	"
" Budloo, contractor, Lucknow	398 6 0	"	"
" Pirbhu Dyal, Rájah of Oel's Karinda	50 0 0	"	"
Executive Commissariat Officer, Lucknow, (firewood)	674 8 0	"	"
" Engineer, Military Works, Lucknow, (charcoal)	157 8 2	"	"
Total Rs. ..	9,919 1 2	"	
LIABILITIES ON ACCOUNT OF TIMBER SALES.			
Executive Engineer, Sitapur Provincial Division, Public Works Department, Oudh ..	3,468 7 7	I, 1, (a)	Excess credit afforded by Executive Engineer in 1875-76, plus balance Rs. 5,956-2-5 minus Rs. 883 at the commencement of the year.
" " Military Works, Dinapore	32 6 0	"	Excess payment made for carriage of timber to be refunded.
Azimulla, Agent of Bakshulla of Pilibhit	50 0 0	"	To be repaid by supplying Asna timber.
Oudh and Rohilkhand Railway Company, Lucknow	23 13 4	"	
Total Rs. ..	3,574 10 11	"	

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

APPENDIX No. I.

List of forest cases tried and punishments awarded in Oudh, during the financial year 1875-76.

Number.	Name, residence, and occupation of accused.	Date and locality where the offence is stated to have been committed.	Nature and description of offence.	Sentence.	Remarks.
		KHERI DIVISION.			
1	1 Bani, son of Durjun, caste Pasi.	10th March 1875, section V. of the Kheri Forest Division.	Cutting a green sál tree. Breach of Rule X. of Forest Rules.	1 month's rigorous imprisonment.	Tried under section 379, Indian Penal Code.
	2 Munsa, son of Bhimma, caste Morao.		.....	Ditto ditto	
	3 Newaz, son of Gunga, caste Morao.		.....	Ditto ditto	
	4 Girwara, son of Badal, caste Morao. Residents of Chota Pullia, thanah Singhai, district Khe.		.....	Ditto ditto	
2	1 Gumani, Gadaria ...	21st September 1875, Section IV. of the Kheri Forest Division.	Cutting green khair tree. Breach of Rule X. of Forest Rules.	1 month's rigorous imprisonment and fine Rs. 2.	Ditto ditto.
	2 Surji, ditto ...		.....	Fined Rs. 1, in default, 7 days rigorous imprisonment.	
	3 Suba, ditto ...		...	Fined Rs. 2, in default, 15 days rigorous imprisonment.	
	4 Nanda, ditto ... Residents of Munsa, Purwa, parganah Bhúr, district Kheri.		.....	Fined Rs. 1, in default, 7 days rigorous imprisonment.	
3	1 Shumbhu, son of Tula, caste Bote.	9th March 1875, section IV. of the Kheri Forest Division.	Removing timber without authority. Breach of Rule XI. of Forest Rules.	Discharged	Ditto ditto.
	2 Baldi, do. do.		...	Ditto	
	3 Teeka, do. do. Residents of Khairani, parganah Bhúr, district Kheri.		...	Ditto	
4	Bhura, son of Birja, resident of Dhourehra, district Goruckpur.	20th March 1876, section IV. of the Kheri Forest Division.	Setting fire to Forests. Breach of Rule XII. of Forest Rules.	Discharged	Tried under section 436, Indian Penal Code,
A	Moulabux, son of Shadulla, Mohurrir on grazing collection, resident of Saloun, district Partabgarh.	19th August 1875, section VIII. of Kheri Forest Division.	Criminal breach of trust, section 406, Penal Code.	Six months' rigorous imprisonment and fine of Rs. 50, in default of payment, 3 months' more imprisonment.	This is not a case against Forest Rules.
5	1 Subba Singh ...	13th February 1875, grant Mohanpur, Bhira Sub-division.	Grazing cattle in plantation, Act I. of 1873.	1. Discharged	Date of sentence 27th July 1875.
	2 Ranjít Singh Residents of Dundoulia, parganah Muhamdi, district Kheri.		.....	2. Fined Rs. 2	
6	1 Roopun, Guddee ...	9th April 1875, grants Punerbhoo and Dulaha, Bhira Sub-division, district Kheri.	Cutting green sál trees. Breach of Rule X. of Forest rules.	1. One month's rigorous imprisonment.	Tried under section 379, Indian Penal Code.
	2 Teeka ditto ... Residents of grant Punerbhoo, Tahsíl Gola, district Kheri.		.....	2. Fifteen days rigorous imprisonment.	
7	1 Moola, Chamar ...	25th April 1875, grant Dulaha, Bhira Sub-division, district Kheri.	Cutting green trees without permission, Rule X.	1. Ten stripes	Ditto ditto.
	2 Tula ditto ... Residents of Gola, district Kheri.		.....	2. Ten do.	

APPENDIX No. I.—(*continued.*)

Number.	Name, residence, and occupation of accused.	Date and locality where the offence is stated to have been committed.	Nature and description of offence.	Sentence.	Remarks.
		KHERI DIVISION.—(*continued*).			
8	1 Basawun, Pasi, and two others.	13th July 1875, grant Gulra, Bhira Sub-division.	Cutting green sál tree. Breach of Rule X. of Forest Rules.	1. One month's rigorous imprisonment.	Tried under section 379, Indian Penal Code.
	2 Residents of Alinagar, parganah Aurangabad, district Kheri.	.....	.....	2. Ditto ditto	
	3	.....	.....	3. Ditto ditto	
9	1 Karim Bux, resident of Hakimpur, district Kheri.	3rd February 1876, grant Hakimpur, Bhira Sub-division.	Cutting green ebony tree. Rule X. Oudh Forest Rules.	1. Fifteen days rigorous imprisonment. R. S. DODSWORTH, *Assistant Conservator, Kheri Division.*	Ditto ditto.
		BAHRAICH DIVISION. MOTIPUR SUB-DIVISION, *Section I.*			
10	Debi, Chamar of Gor Khali.	15th May 1875, Kutais	Burning sissoo timber for ash.	A fine of Rs 10, Mr. Irwin, Assistant Commissioner.	
11	Makka and Sujan, Banjaras of Gor Khali.	5th July 1875, sissoo plantation.	Cutting reeds from sissoo plantation.	Tahsíldár of Nánpará, 12th July 1875.	Released.
		Section II.			
12	Mahngai, Kandoo of Dhurmapur.	8th May 1875, Forest.	Firing a green sál log	Rs. 25 fine, Mr. Irwin, Assistant Commissioner, 11th May 1875.	
13	Dwarka, Brahmin of Sujowli.	3rd August 1875, within Forest.	Cutting thick sál rafters.	A fine of Rs. 10, Mr. MacMahon, Assistant Commissioner, 10th August 1875.	
14	Parshad, Gooria of Harkhapur.	12th August 1875, within Forest.	Cutting 7 sál saplings.	Mr. MacMahon, Assistant Commissioner, 12th August 1875.	Released.
15	Jograj, Kurmi of Ajudhia Purwa.	5th September 1875, within Forest.	Cutting 2 sál ridge poles.	Fled. Proclaimed. Mr. MacMahon, Assistant Commissioner, 8th September 1876.	
		Section III.			
16	Mugrai, Ahir of Goolri...	4th April 1875, Goolri ...	Theft of a dry sál ridge pole.	A fine of Rs. 3, 6th April 1875, Tahsíldár of Nánpára.	
17	Ajudhia, Balak, Salari, Imambux, Salaru, Bhikari and Nubbu Khan, Julahas of Amarwa, Kola and Gujrana.	9th April 1875, Tal Kobi within Forest.	Fishing.	Mr. Irwin, Assistant Commissioner, 16th April 1875.	Released.
18	Ramai and Gobindai, Dhobi, and Bata, Taili of Lala Purwa.	1st June 1875, Buksaiha	Cutting 400 bundles of thatching grass.	A fine of Rs. 4, Rs. 3 on Ramai, annas 8 on Gobindai, annas 8, on Bata, Mr. Irwin, Assistant Commissioner, 5th June 1875.	
19	Khooshal 1, Bhagan 2, Gujars, Imrat, Chamar, 3, Baldi Dhobi 4, Tikka 5, Ori 6, Mihin 7, Kalidin 8, Ramcharan 9, Kurmis of Bakoola and Surji, Taili of Rajapur 10.	9th April 1875, Bakaiha tank within Forest	Fishing.	A fine of Rs. 3 each, Mr. Irwin, Assistant Commissioner, 29th April 1875.	
20	Shiamlal and Dhanoo Ram, Kurmi of Karwa.	31st May 1875, Mihin Purwa.	Cutting a green sál log.	Mr. Irwin, Assistant Commissioner, 14th June 1875.	Released.
21	Nawab Haider Kuli Khan 1, Sheodial 2, Karinda, and Husain Alí of Nánpára 3.	18th September 1875, Rai Bajah.	Theft of unreserved saplings 60.	A fine of Rs. 14, Sheodial Rs. 7, Husain Ali Rs. 7, Nawab Haider Kuli, released, Tahsíldár of Nánpára, 2nd October 1875.	
22	Jaloo, Ghosi, and two others of Nánpára.	3rd December 1875, within Forest.	Cutting kaim and bamboo for fodder.	A fine of Rs. 20, Tahsíldár of Nánpára, 5th January 1876.	
23	Peetamber, Gujar of Kussoolia.	4th March 1876, Laha ...	Cutting sál for firewood.	A fine of annas 2, Tahsíldár of Nánpára, 15th March 1875.	

APPENDIX No. I.—(*continued.*)

Number.	Name, residence, and occupation of accused.	Date and locality where the offence is stated to have been committed.	Nature and description of offence.	Sentence.	Remarks.
		MOTIPUR SUB-DIVISION. —(*continued.*)			
24	Dindial and Narain, Banias of Motipur.	14th March 1876, Motipur.	Cutting unreserved wood for firewood.	A fine of Rs. 5, Dindial Rs. 4, Narain Rs. 1, Tahsíldár of Nánpára, 16th March 1876.	
		Section IV.			
25	Khudabux, Chikwa of Babagunj.	6th October 1875, betwixt Kerim and Mand Nala.	Breach of Forest Rules	A fine of Rs. 5, Tahsíldár of Nánpára, 12th October 1875.	
26	Noorchi, Chamar, Ala Bhujun, Jolaha, and Ram Sahoy, Kurmi of Patnala.	Out of Forest boundary, 21st October 1875.	Ditto	Tahsíldár of Nánpára, 20th October 1875.	Released.
27	Mungria, Mungul, Kurmi, and Baldan, Tamoli of Bukhari.	1st November 1875, Chakia Forest.	Ditto	A fine of Re. 1 each, Tahsíldár of Nánpára, 5th November 1875.	
28	Aladin, Manihar of Lakhia.	15th November 1875, Katgarh.	Theft of 1 cart load unreserved saplings.	A fine of Rs. 30, Tahsíldár of Nánpára, 22nd November 1875.	
29	Seobuns, Bansi, and 2 others of Masjedia.	12th December 1875 ...	Theft of a hollow wood of jamun.	A fine of Rs. 7 on the 3rd, and Rs. 2 each on 1st and 2nd = Rs. 11, Tahsíldár of Nánpára, 15th December 1875.	
30	Hira Lal, Kori of Bhagora.	14th December 1875 ...	Theft of 4 uprights.	A fine of Rs. 10, Tahsíldár of Nánpára, 15th December 1875.	
31	Bhawanidin, Kurmi of Arburwa, and Basti, Chamar of Jalalpur.	18th December 1875.	Cutting saplings ...	A fine of Rs. 10 was imposed on Forester, Section IV. and given to defendant, Tahsíldár of Nánpára, 20th December 1875.	
32	Pundit Ramdin of Arnawa, Thekadar of Bansgarhi.	4th June 1875.	Theft of 13 waif logs	Under trial, Mr. MacMahon, Assistant Commissioner.	
		BHINGA SUB-DIVISION.			
		Section V.			
33	Balai, Kahar, Daibi and Tulsi.	8th February 1876, Bujhbujhwa.	Fishing	A fine of Rs. 5 on No. 1 and 2, and 3 released, Tahsíldár of Nánpára, 9th February 1876.	
		Section VII.			
34	Paltai of Simra	5th June 1875, section VII.	Breach of Forest Rules	A fine of Rs. 1, 29th June 1875.	
35	Jurawan Gaddi of Gulra	3rd July 1875, section VII.	Ditto	A fine of Rs. 2, in default payment, 4 days imprisonment, 3rd July 1875.	
36	Lachmun and Jeonarain of Sujowli.	10th July 1875, section VII.	Ditto	10th July 1875	Released.
37	Rampershad and Ori, Ahir of Bakri.	26th March 1876, Sakri, Section VII.	Ditto	Under trial, Mr MacMahon, Assistant Commissioner.	
38	Piran, Brahmin, and Ghirao, Ahir.	31st January 1876, section VII.	Ditto	Under trial, Mr. Irwin, Assistant Commissioner.	
		Section VIII.			
39	Ganaish, Gursahoy, Mahabali of Jamni.	10th August 1875, section VIII.	Theft of unreserved wood.	A fine of Rs. 2 each on Ganaish and Gursahoy, Rs. 1 on Mahabali, 10th August 1875.	
40	Gunga, Ahir of Bunsipur	6th August 1875, section VIII.	Breach of Forest Rules	A fine of annas 2, 9th August 1875.	
41	Daibai, Sheodin, Jaganath, Bunsgopal, and Gurdial of Madhopur.	23rd August 1875, section VIII.	Theft of unreserved wood.	Mr. MacMahon, Assistant Commissioner, 26th August 1875.	Released.

APPENDIX No. I.—(*continued.*)

Number.	Name, residence, and occupation of accused.	Date and locality where the offence is stated to have been committed.	Nature and description of offence.	Sentence.	Remarks.
		BHINGA SUB-DIVISION.—(*continued.*)			
42	Ram Asrai of Murtahwa,	9th December 1875, section VIII	Theft of sál wood ...	Mr. Irwin, Assistant Commissioner, 10th December 1875.	Released.
43	Chand Khan, Mangal, and Balai of Asnaria.	14th January 1876 ...	Theft of unreserved wood.	A fine of Rs. 4 each on Chand Khan and Mangal, and Rs. 5 on Balai, Mr. Irwin, Assistant Commissioner, 15th January 1876.	
44	Neshoo, Ahir of Madhwapur.	4th February 1876 ...	Ditto	A fine of annas 4 only, Mr. Irwin, Assistant Commissioner, 6th February 1876.	
45	Mungrai, Dhobi	9th April 1875, section V.	Theft of Mowah 6 seers	A fine of Rs. 10 in default 1 month's imprisonment, Tahsildár of Nánpára, 10th April 1875.	
				C. J. PONSONBY, *Offg. Deputy Conservator, Oudh Forests, Bahraich Division.*	
		GONDA DIVISION.			
46	Bhaiso, Bhagan and Bhojan, Ahirs of Soharia.	17th April 1875, Ramgurh grant.	For assaulting a Government servant taking cattle to the pound for trespassing in the Government Forests.	Six months' rigorous, imprisonment each.	Deputy Commissioner's No. 1415, dated 12th June 1875.
47	Guptar, Sukai, Mahabir and Lotai, caste Kurmi.	22nd April 1875, Sonepur, Section II.	For taking out one cart load of rafters of sakoo and one of firewood without permission.	Guptar and Sukai fined Rs. 2 each, or in default 1 month's rigorous imprisonment, others fined 8 annas each, in default 10 days' rigorous imprisonment.	Tahsildár of Utraula, 12th May 1875.
48	Pirag, Goja and Rattan, caste Bhat, Seetal, Ahir and Mithoo, caste Chamar of Dhamori,	10th December 1875, Dhamori, section II.	Rescuing 70 cows found trespassing in the Government Forest on their way to the pound.	A fine of Rs. 5 each and 2 months' rigorous imprisonment or in default 1 month more of rigorous imprisonment.	Deputy Commissioner, 4th January 1876.
49	Salar Khan of Simri ...	6th February 1876, section II.	Lopping a green dhao tree.	28 days' rigorous imprisonment.	Tahsildar of Utraula, 12th February 1876.
50	Sahabdin, Gurdin, Sheodat and Gokal, caste Moraos.	11th July 1875, Bhagai, Section III.	Lopping unreserved wood.	Gokal 1 month's and others 21 days' rigorous imprisonment.	Ditto, 17th July 1875.
51	Shami Nath, caste Brahmin.	7th May 1875, section IV.	Breach of Forest Rules	A fine of Rs. 10, or in default 1 month's rigorous imprisonment.	Ditto, 13th May 1875.
52	Ramdin, caste Brahmin of Barhewa.	7th May 1875, section IV.	Ditto	A fine of Rs. 25, or in default 4 months' rigorous imprisonment.	Deputy Commissioner, 20th July 1875.
53	Eeshur Datt, caste Brahmin.	7th May 1875, section IV.	Ditto	A fine of Rs. 25, or in default 1 month's rigorous imprisonment.	Ditto.
54	Lukai, Dhari and Gurdin, Esri, Ori and Mahabir, caste Kurmi.	13th December 1875, section IV.	For cutting three green sakoo trees.	A fine of Rs. 2-8-0 each or in default 3 months' rigorous imprisonment.	Mr. Hoey, Assistant Commissioner, 18th January 1876.
55	Kirpa, caste Brahmin ...	16th February 1876, section IV.	For stealing green sakoo wood.	A fine of Rs. 2 and 1 month's rigorous imprisonment, in default 1 month more of rigorous imprisonment.	Mr. Hoey, Assistant Commissioner, 21st February 1876.

W. E. FORBES, CAPTAIN,
Deputy Commissioner of Gonda.

C. J. PONSONBY,
Offg. Deputy Conservator, Gonda Division.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh.

APPENDIX II.

Area of reserved forests.

Reserved forests.	Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.
	Square miles.	Square miles.	Square miles.	Square miles.
Kheri division	427	...	...	427
Bahraich do.	257	...	...	257
Gonda do.	140	...	...	140
Total ...	824	...	...	824

Area of plantations.

Plantations.	Area in 1874-75.	Total cost.	Area added during 1875-76.	Amount expended during 1875-76.	Total area up to 1875-76.	Total expenditure incurred up to 1875-76.
	Acres.	Rs. As. P.	Acres.	Rs. As. P.	Acres.	Rs. As. P.
Sissu, Bambu and Babul Plantation	351	7,323 15 11	...	...	*Nil.*	7,323 15 11
Total ...	351	7,323 15 11	...	...	...	7,323 15 11

The Bahraich Sissu plantation has been destroyed by fire so that there are no plantations kept up, and I do not recommend any new ones being made.

APPENDIX II.—(*concluded.*)

Area of forest tracts protected from fire.

Forest tracts protected from fire.	Area in 1874-75.	Total cost.			Additional area protected in 1875-76.	Amount expended in 1875-76.			Total area protected up to end of dry season 1875-76.	Total expenditure incurred up to 1875-76.		
	Acres.	Rs.	As.	P.	Acres.	Rs.	As.	P.	Acres.	Rs.	As.	P.
Kheri	12,800	475	0	1	...	1,174	14	2	12,800	1,649	14	3
Bahraich	7,680	2,372	7	7	...	237	8	8	7,680	2,610	0	3
Gonda	...	...			...	...			...	...		
Total ...	20,480	2,847	7	8	...	1,412	6	10	20,480	4,259	14	6

Prosecutions for breaches of the forest rules.

	Number of prosecutions.		Convictions obtained or still pending.	
	Number of cases.	Number of persons.	Number of cases.	Number of persons.
Kheri division	9	22	7	17
Bahraich do.	36	81	28	58
Gonda do.	10	26	10	26
Total ...	55	129	45	101

E. WOOD, CAPTAIN,

Conservator of Forests, Oudh.

REVENUE DEPARTMENT.

FORESTS.

Lucknow, 30th October 1876.

READ—

The Forest Progress Report for 1875-76 submitted by the Conservator of Forests, Oudh.

RESOLUTION—

1. The Report was not received until the 12th September.

Para. 2.

2. The Officiating Chief Commissioner will submit to the Government of India, in a separate communication, his proposals for supplying the population in the vicinity of the forest with pasturage and forest produce. The subject has been reported on at length by Captain Wood and Captain Pitcher, members of the special commission of enquiry, appointed with the sanction of the Government of India.

Paras. 10 and 11.

3. With reference to the improvement-fellings, the continuance of which as an experiment the Government of India sanctioned in its orders on last year's report, the Conservator contents himself with saying that where the system has been carried out the young growth is looking well, but that very little work was done during the year, because he had not a sufficient staff to supervise it, and because the operations were scarcely remunerative. Extensive operations were not contemplated by the Government of India, but the Conservator should have stated what area was operated on, what was the condition of each year's cuttings, and what were the receipts and charges connected with the experiment. In para. 27 of the present report, the Conservator says that it is difficult to keep the accounts of the stock yielded by the improvement-fellings separate from the rest of the stock, but this difficulty is not insuperable, and at least the Conservator should be able in some way or other to show how far his scheme is, or is not, financially successful. It would appear from Captain Wood's observations that his estimate of last year, that there would be a minimum profit of Rs. 50 per acre from the area cleared, was too sanguine.

Para. 12.

4. The Officiating Chief Commissioner does not understand why, in the forests, sissú plantations must necessarily be a failure and why we should be solely dependent for a new growth on what may be spontaneously sown on the borders of streams. Judging by the success with which the tree has been grown in Lucknow and other places, it seems probable that what is required is the judicious selection of sites for the plantations.

Para. 13.

5. The excellent roads which have been made through the forests and the substantial masonry wells which have been built alongside of them not only serve to develope forest resources, but are of no little convenience to travellers.

6. Two reports recently received on the working of the saw machinery will be separately considered and submitted to the Government of India. Para. 19.

7. In the report for 1874-75 the Conservator represented that contractors purchased Nepál timber because it was better than he could supply in the log, and he considered that the only way of disposing profitably of our own timber was to saw it up in the first instance. When the Government of India, in view to the competition from Nepál, suggested a curtailment of the selection-fellings, the Conservator urged that this was not advisable, as it would cause a loss of revenue and disperse labor which had been collected with difficulty, and he announced that he had made arrangements by which the whole of his timber would be disposed of to advantage. On these representations the Government of India consented, at the request of the Chief Commissioner, to allow the fellings to continue as before. Para. 20.

It is difficult to reconcile with these representations the opinion expressed in the 20th para. of the report under review, in which the Conservator says that he is doubtful whether we should not content ourselves with "supplying the raw material," in which form he last year said his timber could not compete with that sent from Nepál. It is scarcely a sufficient reason for reverting to the sale of timber in the log that the officers in charge of Military Public Works at Lucknow and Fyzabad do not buy wood direct from the Forest Department. These officers may be presumed to know their own business best, and they would doubtless resort to the Forest Department depôt for what they require if they shared the Conservator's opinion that what is there procurable is better and cheaper than what is furnished by contractors. Again it is reasonable to suppose that the contractors would themselves purchase from the department if they could suit themselves better than by going to the Nepálese market. The fact is there is nothing to show that the Oudh timber in the log would now occupy a more favorable position in the market as compared with Nepál timber than it was represented to occupy a year ago.

8. The surplus of revenue over expenditure during the year was, Rs. 96,243, almost exactly the sum (Rs. 97,000) of the regular Budget estimate, but Rs. 21,757 less than the first estimate. Two-thirds of the deficiency, as compared with the original estimate, is due to an adjustment ordered by the Government of India, whereby Rs. 14,000 of the price charged to the Bengal Government for canoes supplied in 1874 were refunded. Para. 21.

9. At para. 25 of the report the Conservator gives the revenue and expenditure on account of departmental timber operations during the past 5 years. In the following table is shown, for the same period, the profits or loss on those operations, the profits from other sources, and the annual surplus :— Para. 25.

Year.	Profit or loss from departmental timber operations.	Profit from other sources.	Annual surplus.
	Rs.	Rs.	Rs.
1871-72 ..	— 12,654	23,739	11,085
1872-73 ..	+ 63,391	89,447	1,52,838
1873-74 ..	+ 75,104	28,643	1,03,747
1874-75 ..	+ 22,008	50,576	72,584
1875-76 ..	+ 18,610	77,633	96,243
Total ..	+ 1,66,459	2,70,038	4,36,497

Thus 38 per cent. of the surplus of the past 5 years has been contributed by the sale of timber departmentally, but the proportion has been much less in the two last years of the series.

G. E. ERSKINE,

Persl. Asst. to the Chief Commissioner, Oudh.

PRINTED AT THE OUDH GOVERNMENT PRESS.

No. 227.

FROM

G. H. M. BATTEN, ESQUIRE,

Offg. Secretary to the Government of India,

To

THE CHIEF COMMISSIONER OF OUDH.

Department of Revenue, Agriculture, and Commerce.

Forests.

Calcutta, the 13th February 1877.

SIR,

I AM directed to acknowledge the receipt of your letter No. 3850, dated the 31st October last, forwarding the Report on Forest Administration in Oudh for 1875-76, and of your review thereon.

2. The receipts and charges for the year as compared with those of 1874-75 have been as follows:—

		1874-75. Rs.	1875-76. Rs.
Receipts		2,77,411	2,94,658
Charges	A.	1,58,161	1,48,950
	B.	46,666	49,465
	Total	2,04,827	1,98,415
	Surplus	72,584	96,243

The transactions of the year exhibited under the great main heads of Revenue and Expenditure have been as follows:—

	Receipts.	Rs	Charges.	Rs.
I.—Departmental timber operations	I, 1 and 3	1,34,860	I, 1 and 3, half of VIII, IX and B.	1,30,436
II.—Other Revenue	I, 2; II and IV	1,59,798	I, 2; II, X, quarter of VIII, IX and B.	33,168
III.—Formation, protection and other improvements of forests.	.....	...	III, IV, VII, quarter of VIII, IX and B.	34,811
		2,94,658		1,98,415

3. Captain Wood's report is not satisfactory. You have justly noticed the insufficient information given regarding the system of cuttings in the Kheri Division, which was first recommended by Captain Wood in his report for 1873-74, and termed by him "improvement cuttings." In the orders on the report for 1874-75, the Government of India discussed the subject in detail, and

said that the object of this experiment would be to ascertain the amounts expended on and realised from these operations, and suggested the submission of a special report on each year's cuttings and on the receipts and charges on account of these operations.

4. The Conservator has contented himself with saying that a very small portion of work was carried on; that the stock from these cuttings gets mixed up with the other stock; and that it is difficult to give an exact detail of expenditure and income.

But, as pointed out by you, the orders of the Government of India specifically required an account of the receipts and charges of these operations, and the Conservator has neglected to attend to these orders.

5. Very probably the fuel and inferior timber which forms the bulk of the material obtained from these cuttings was not saleable under present circumstances at remunerative rates, but this should have been explained in detail, and an effort should under all circumstances have been made to keep a separate account of the materials obtained from these cuttings.

The Conservator should be informed that to commence experiments of this class, without keeping an accurate record of their results, can only lead to waste of time and money. A special report should now be submitted showing the area cut over each year, and giving an approximate statement of the material obtained.

6. The comparative statement of the financial results of timber operations during the past five years is more favorable than was expected; but, as you correctly observe, the surplus from these operations during 1874-75 and 1875-76 has been insignificant. According to the report for 1873-74, the value of the stock in hand at the close of that year was Rs. 2,32,771; at the close of the year under review it was only Rs. 2,12,126. This depreciation in the value of stock absorbs more than one-half of the small surplus realized by these operations during these last two years *viz.*, Rs. 40,618. Considering that the outlay on this account during these two years aggregated Rs. 2,25,760, a net profit of Rs. 19,973 on this outlay is obviously unsatisfactory.

7. The question whether the annual selection cuttings, which furnish the main portion of the timber exported from the Oudh forests by Government agency, should not be curtailed, was discussed fully in the letter from this office, No. 280, dated 29th March last. The Government of India had suggested that these operations might advantageously be curtailed, but this suggestion was withdrawn on Captain Wood's statement that there was a reasonable prospect of a steady demand at remunerative rates for public buildings and for other purposes. So much is clear that, during the two years that have passed, these operations have not been remunerative, and as regards the future, no facts are recorded in the present report which justify the expectation of a more favorable result.

8. It will, however, be advisable not to form any hasty conclusions on this question, and under all circumstances it seems right to continue during a sufficient time the operations which Captain Wood has set on foot at Bahramghât, to improve the sale of the Oudh timber by sawing it up into scantling. The result of these operations will be awaited before passing final orders on the subject of curtailing the annual selection cuttings. Hitherto the work of the saw-mill at Bahramghât has not been profitable, and should this continue so, as Captain Wood himself seems now to anticipate, and should no other mode of disposing of the produce of the Government timber operations in the Oudh forests at remunerative rates be discovered, then it will have to be seriously considered whether the annual selection cuttings should not considerably be curtailed. From paragraph 13 of the report it is gathered that, owing to the good system of roads and wells constructed by the Conservator, and the clearing of the Suheli river effected by him, the outturn of dead and fallen timber removed by purchasers from the forests has increased, and may be expected further to increase. During the year under review it is observed that Rs. 1,26,000 were realized from wood and timber removed by purchasers; this in fact seems at present to be the chief source of surplus revenue from the Oudh forests.

9. It is premature at present to form any final opinion on this subject, but should you, after further experience, recommend a considerable reduction of the present departmental timber operations, there seems good reason to expect that the other sources of revenue will maintain a surplus equal to the present moderate average.

10. The great advantage of curtailing the present timber operations would be, that the time and energies of the staff might then be devoted exclusively to works of improvement. In this latter respect not much progress is reported. It is satisfactory that protection was continued in the blocks which had been protected from fire last year, but no extension has been attempted, and the sissoo plantation in the Bahraich district has been burnt.

It has been noticed, from the Conservator's budget note, that Rs. 30,000 were realized during the year under review by sale of sissoo timber to the Gun Carriage Agency, and that the same amount is expected to be realized during the current year and during 1877-78. Considering the small extent of forest producing sissoo in Oudh, of which only an insignificant area is at present protected from fire, it does not seem prudent to rely on natural reproduction for the supply of this timber, and the Conservator should consider a plan for forming an extensive plantation of this tree at a locality more suitable than the one previously selected. In the Punjab the cultivation of sissoo on a large scale has now been reduced to a regular practice, and it seems unreasonable to suppose that in the moist climate of Oudh there should be any difficulty in raising artificial forests of this valuable tree, provided, as you remark, suitable localities are selected.

11. The Governor General in Council trusts that the report for the current year will give evidence of better progress, and greater energy and industry on the part of the Conservator, especially in the most important part of his work which relates to the improvement of the forests in his charge.

I have the honour to be,

SIR,

Your most obedient Servant,

Offg. Secretary to the Government of India.

1877.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

FORESTS.

To

THE CHIEF COMMISSIONER
OF OUDH.

No. 227.

Dated Calcutta, 13th February 1877.

SUBJECT.

REVIEW of the Annual Report of the Forest Department in Oudh for 1875-76.

Government Central Press.—No. 668, R., A. & C.—16-2-77.—470.

No. 44-B of 1876-77.

FROM

CAPTAIN J. C. DOVETON,
CONSERVATOR OF FORESTS,
Central Provinces.

TO

THE SECRETARY TO THE CHIEF COMMISSIONER,
Central Provinces.

Dated Nagpur, the 17th June 1876.

SIR,

I have the honor to submit the annual report on Forest administration for the official year 1875-76. There is nothing in connection with the year's transactions to call for introductory remarks, and the report therefore commences with the next prescribed head.

PART I.—SPECIAL.

HEAD I.—STATE AND LEASED FORESTS.

SECTION I.

Area, boundaries, &c.

2. Form A. exhibits an increase in the area of the reserves of 223 square miles and 302 acres, and a decrease of 24 square miles and 160 acres. The increase is accounted for by the addition to the Moharli reserve of 150 square miles, and the Dhuga and Erjhur reserves with an area of 40 square miles and 382 acres sanctioned in 1874-75, being brought on to the reserved forest register in 1875-76. A difference of 5 square miles and 170 acres also results from the closer computation of the areas of the reserves in the Northern Division, some of which have now been accurately determined by the survey carried out by the regular Survey Department, and to the inclusion of the small reserve of Ahiri, originally taken up for a teak plantation, but which being found unsuitable for this purpose was temporarily discarded. It has since been found that it will prove valuable for other purposes, and has consequently been brought on to the register The decrease represents the difference between the estimated area of Jagmandal and the real area as determined by survey.

3. No additions to the area of the reserves have been sanctioned or proposed during the year, but in accordance with the spirit of the Chief Commissioner's instructions conveyed in paragraph 3 of the review on the forest report for 1874-75, several tracts along the Nerbudda in North Mandla have been examined with the view of selecting new reserves. In like manner the Chandgarh Forest in Nimar and several tracts in Saugor are under examination by officers of the department, and reports on them with proposals for the reservation of those areas that it is most desirable to preserve, will, in due course, be submitted for the Chief Commissioner's consideration.

4. The cleared lines round the Ahiri forests were increased in width to 40 feet. The cutting of a clear line where required round the Erjhur and Dhuga reserves has been postponed till the next open season, when, with the establishment now sanctioned, these forests may be brought under the control of the offi-

27-7-76 M.X b 12-570

cers of the department. Owing to the advisability of extending the limits of the Moharli reserve beyond those sanctioned last year, the cutting of a clear line round the additional area reserved was postponed, pending further enquiry and report. This matter has now been finally disposed of by the Chief Commissioner's orders on the last reference from this office, and the demarcation where the limits are not already naturally defined will now be pushed on.

SECTION II.

Requirements of the population, &c.

5. During the past year some efforts were made to give effect to the Chief Commissioner's instructions as conveyed in paragraph 3 of the review on the report for the past year. The data as yet collected are, however, limited, and represent the produce consumed from Government forests only, while it is impossible to tell what portion of the wants of the people the produce of these forests supplied. The difficulty arises from the fact that the wants of a large portion of the community are supplied from private forests, of the produce removed from which an account is rarely if ever kept.

6. With the increase in their area the state reserves have contributed more largely in meeting the requirements of the people, as may be seen on reference to Form F. Much of the material sold from depots has also gone to meet local requirements, but it would be scarcely possible to determine what portion was consumed locally, and what was exported. At present the wants of the people for all classes of forest produce are amply met. In parts of Wardha, Nagpur, and Chhattisgarh the people may have to go some distance for their supply of building wood, but they nevertheless at present obtain it without difficulty and on excessively easy terms. Doubtless where the facilities for obtaining produce are greatest, owing to the proximity of the forests, the present consumption is much in excess of present actual requirements. This, however, even if accessible, it would be impossible to prevent in the wilder parts of the provinces, while elsewhere the gradual rise in rates and requiring payment for the produce actually taken will check waste and bring down the demand to a figure more closely approaching to actual requirements. Where, however the supply, or more correctly the capabilities of the forests do not fall short of the demand, it would be a false policy to try and reduce the consumption by enhanced rates. At the same time it may be said that with rare exceptions present rates are so easy that even if they were doubled, the effect on the demand, if perceptible at all, would be but trifling.

SECTION III.

Protection.

7. There has been no alteration in the forest law and rules, nor was there any change in the strength of the permanent establishment available for enforcing them. There has been a considerable increase in the number of prosecutions, which amount in the past year to 544, involving 1,278 persons, of whom 1,231 were convicted and punished. The smaller number of prosecutions in connection with the reserves is due to the more lenient course, of allowing people in trivial cases to pay at a rate above that ordinarily charged for produce, that may have been removed without proper authority. The principal increase in prosecutions connected with the unreserved forests has been in Chanda, Mandla and Seoni. In the latter district the increase is doubtless due to the energy of the establishment in putting down unauthorized felling. In Chanda it is probably due in a great measure to the abolition of the system of leasing the right to collect the forest

dues, under which system there was but a small establishment to bring offences to light, while the contractor had of course no interest beyond obtaining payments for the produce taken. In Mandla the increase is partly the result of excessive leniency in previous years, and partly of stricter supervision.

Section IV.

Management and Improvement.

Protection from fire.

8. In accordance with the spirit of the orders conveyed by letter No. 125 of 3rd February 1875, from the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce, all divisional officers were enjoined to proceed with the extension of this protective measure till fires are excluded from the entire area of the reserves. The area under protection has accordingly been increased by acres 237,039, and in spite of some failures, that will be referred to hereafter, the area actually protected was 358,595 acres. Under the orders already referred to, the entire area of the reserves having to be gradually brought under protection, more attention was paid to secure uniform and regular extension than to selection for any other reason; nevertheless, with one or two trifling exceptions, there are special reasons for first taking in hand the *areas* that have been selected,—thus the Banjar was taken in hand on account of the high value that attaches to it, the quantity of dead wood it contains, and the facilities which existing operations afforded. The protection of the well stocked little forest of Mothinala was allowed, to encourage the enterprising spirit of the subordinate in charge, as well as in consideration of the advantages that would result to the forest. The areas in the Southern Division comprise either the most promising or the most accessible portions of the reserves. The additional area in the Central Division is the most accessible portion of the Satpura Reserve. In the case of the small reserves in Saugor there was no field for special selection, while in the Western Division protection was chiefly extended to those areas in which the coppicing of badly grown teak is in progress.

9. During the year several fires occurred in the protected areas. Of those which occurred in blocks that had previously been protected, two only were of any importance. Of these, the worst was the fire that occurred after the close of the year in the Korai block, and lasting for three days, burnt 8,700 acres. Fire appears to have been blown across the outer boundary at the north-west corner of the block, which indicates that the fire line had not been cleared to a sufficient width. A special report on the subject will be submitted after further enquiry into the case has been made. It is due to Mr. Jacob, the Divisional Officer, to state that when the fire entered the forest he underwent great personal exertion in his endeavours to overcome it.

The other fire referred to was in the Bori forest, and occurred in the hot season of 1875, through the negligence of an European soldier. The area burnt was about a square mile in the south-east corner of the forest. It was one of the least accessible and least productive portions of the reserve, though the vegetation on it was dense. The fires which occurred in Kalibhit, Raja Borari, Saoligurh, Kamapur and Punassa, were of less importance. With the exception of Punassa the protection of these blocks had not before been attempted. These failures will have proved lessons to the establishment, whose effort, without doubt, will prove more successful next season. In Punassa, the two fires that occurred were in an outlying and comparatively poor portion of the forest, and can scarcely have done much harm. There have been other fires which have

spread from the fire lines during the process of clearing, but they have been altogether too trifling for special notice.

10. It will be seen that whereas the area under protection has risen from 213,278 in 1874-75 to 390,505 in 1875-76, the extent of failures has fallen from 49,114 to 31,910 acres; thus the area actually protected was 358,595 acres against 164,164 acres in the previous year 1874-75. The actual results are, however, somewhat more favourable, for where but a small area only of a block has escaped, the whole has been treated as a failure. It will also be observed that the expenditure per square mile protected amounted to Rs. 17-6-0 against Rs. 20-4 0 in the previous year. In comparing the latter figures, however, it is necessary to remember that some portion of the area is only debited with the charges for part of a season, the actual work of protection having only commenced after the rains of 1875. The charges in Ahiri are still very high, but the rank vegetation and the excessive length of boundary compared with the area enclosed must necessarily render the protection of these forests expensive. In Moharli too, the charges are high, but the work in this forest was debited with the cost of establishment, which would, under any circumstances, have had to be maintained. Now that a permanent establishment has been sanctioned for this reserve, these charges will come under their proper heads. The charges are nevertheless high, and there is reason to hope that they will gradually be reduced.

11. The attempt at raising *aloe* hedges as a barrier against fire has not proved successful, but the plants put out were evidently too young to stand the exposure to which they were subjected. It will not be till the rains of 1877 that the experiment can have a fair trial. But even if it succeeds the *aloe* will not flourish everywhere, and the Inspector General of Forests has recommended a "Kurunda" belt as likely to prove of service in some localities. An experiment with this species will be tried on the Jagmandal boundary.

12. More recent orders conveyed by the Government of India review of the Forest Administration report for 1874-75, have urged the necessity of slow progress in protecting forests from fire, on the grounds that fires in a forest that has been protected for some time do greater damage than fires in a forest that has not been protected, and these instructions will meet with due attention. They will probably necessitate the revival of an old proposal, to decrease the harm done by fires in the large area that will remain for some time unprotected, by systematic and periodical burning early in the season, and thus to prevent the simultaneous burning of the whole year's accumulation of combustible matter.

As regards actual danger to a protected forest, I am inclined to think that the risk has been over-estimated. It is only natural to suppose that there should be a steadily increasing amount of inflammable matter, but in India, climate and other causes prevent accumulation beyond a certain limit, decay is rapid, and insects are ever at work consuming the dead and dying material, while grass, which, in these Provinces, is the origin of the most destructive fires and is the most active agent in communicating combustion to more substantial substances, is slowly but gradually killed out by tree vegetation which fire protection enables to spring up. The progress of events will, however, be very closely watched and recorded.

13. In accordance with the instructions conveyed in paragraph 5 of the review last quoted, the area actually protected at the close of 1874-75 has been exhibited in the first column of Form C. for 1875-76. A special column might be introduced in which the areas burnt might be noted, but this would be to anticipate disasters which should not happen and ultimately will be of rare occurrence.

14. The injurious effects of the fires of 1875 in the blocks in which teak had been coppiced was not so great as might have been expected,—strong and vigorous shoots escaped injury, but where the shoots sprang from the ground in a slanting direction they were generally destroyed and were succeeded in the rains of 1875 by others of more vigorous growth. The most injurious effect, has been damage to the terminal buds only, which has led to bi-furcation and a consequent struggle for the lead between shoots of equal strength starting from the same point.

15. On the effects of keeping out fire in Jagmandal, Baraila, Sigrampur, Bijeragogarh and the Satpura reserve, the Inspector General of Forests will have commented in his inspection report. It is therefore only necessary for me to advert to results in the other reserves that have been under protection for some time. In Ahiri, Mr. Thompson reports that the re-production of teak by seed continues to progress favourably in all blanks and localities not subjected to excessive shade in the growing season, while the development and advancement of the sapling crop is progressing rapidly. Perhaps the most satisfactory evidence that can be given on this subject, is the result of a valuation survey covering 34 acres carefully laid out and executed and running right through the two blocks or divisions first brought under protection. The result of this survey shows that whereas the average per acre of teak, sound, unsound and stumps of 1' 6" and upwards is 23·659, the average per acre of seedlings and saplings is 140·323, there existing associated with the teak a large proportion of seedlings and saplings of other species, principally Saj.

16. From want of time Bori was not closely examined during the year under report, and consequently little can be added to the information furnished in former reports. It is evident that the development of teak trees from small stools has progressed considerably, and if observations in unfavourable localities may be accepted as a criterion of what is elsewhere going on, reproduction of teak by seed is progressing favourably where the cover is not too heavy and the level of the land not too low. In Moharli, where beejasal is the most important tree, the reproduction of this species by seed could not be looked for, as the seed crop has, during the past two years, failed entirely. The forest, however, contains numerous old seedlings, the progress of which has been hitherto retarded by fire, and from the divisional report it would appear that some of these have made good progress.

17. As regards the effect of protection from fire on the soil, it has been observed that there is not that accumulation of leaf in various stages of decay that a knowledge of the annual deposit would lead one to expect. In these Provinces decay is too rapid to admit of the accumulation of such substances, except in a perfectly decayed state; moreover, it is, I believe, but a small portion of the leaf shed that has the chance of going through the ordinary process of decay. Excepting on very sandy soils, no sooner does moisture bring the shed leaf in contact with the soil than it is rapidly consumed by insects, and thus it is ultimately given to the soil in a condition totally different from that presented by regular leaf mould. That this condition is less favourable for forest purposes cannot be denied, but the material still goes to fertilize the soil and improve the growth of the young crops.

Grazing.

18. Excepting in two small plots in the Korai block, the grazing of cattle in areas protected from fire has been strictly prohibited. In the remaining area of the forests the grazing of cattle on permits for fixed periods has been allowed without restriction. The number of cattle permitted to graze in Topla, and the north and south Phen reserves, has not yet been returned to this office; but leaving these forests out of account

27—7—76 M 1—13—570

93,910 head of horned cattle, or about 1·8 per cent of the total stock of the Province as estimated at the time of settlement, grazed in the reserves during the past year.

19. The Inspector General of Forests has during his recent tour expressed himself in favour of opening to grazing some of the reserves that have for some time been under protection from fire; but I am much averse to this course, as it cannot be denied that the keeping out of cattle has been attended with some good, the people are now quite reconciled to the restriction, and there would be no definite object beyond the realization of a trifling sum, too small to have any appreciable effect on the revenue. It may, however, be desirable in some of the blocks hereafter taken up to attempt fire conservancy without excluding cattle, except from small blocks destined to be re-stocked within a given period. Fire protection would still perform the preparatory task of preparing the land for reproduction. Moreover, wherever there are large blanks that will not re-stock naturally, it is most desirable that they should be left open as grazing grounds.

Improvement cuttings.

20. The coppicing of badly grown trees with the view of producing a better crop from shoots may justly be treated under this head. These operations were confined to the Western Division, and the areas set aside for cutting were as follows :—

Punassa	..	15 square miles.
Raja Borari	..	6 ,,
Bowergarh	...	3 ,,
Kamapur	...	A few acres only.
Kalibhit	..	,,
Saoligarh	..	,,

The cuttings have been made by selection, not of the well shaped and most marketable produce, but of the irregular and badly grown trees and stumps which were incapable of improvement, and many of which yielded no marketable material.

Owing to the difficulty of procuring labour in Punassa, the work in this forest has not extended over more than two square miles. The difficulty of procuring labour in this forest, even at the most exorbitant rates, is one of the greatest at present to be encountered. It is partly due to the demand on the Holkar State Railway works, but chiefly to the indolence of the labouring classes, which can only be overcome by competition and example, and it will consequently be necessary to import labour from other places, and possibly to establish regular forest villages where work is in progress.

In Punassa, Mr. Fernandez, Assistant Conservator, has bestowed much pains in the instructing of both subordinates and labourers, and the cutting has been performed in the most satisfactory manner. When inspecting the work in April I was unable to detect a single stump that had not been cut perfectly flush with the ground. The cutting as already stated has been by selection, all straight and promising poles rising direct from the ground being spared. These, though they may not grow into large trees, will have increased considerably in value when the next rotation comes round. It will then be time enough to consider whether the whole or any portion of them should be allowed to grow on or be cut over. The same system has been adopted in the other areas mentioned, but neither the selection nor the cutting has been as good as in Punassa. The reproduction by shoots in the areas copsed has been good, and I have no hesitation in predicting that even at the present current selling rates the stock on the old stools will, at the end of fifteen years, be at least three times as valuable as that which has just been taken off them. It is not, however, to be supposed that shoots have been produced on every

individual stool. Though the percentage of failures has been small, the fact of some stools having died out is of the greatest importance, as it points clearly to the necessity of the operations that have been set on foot. Touching on the subject of failures, Mr. Fernandez writes as follows :—

"Stumps that have time after time suffered cruel lopping and hacking under the most disadvantageous conditions cannot, in the course of nature, have healthy and vigorous roots, and it is not therefore surprising that some have lost all recuperative power, and cannot survive cutting back down to the ground. The stools that have died off, are, for the most part, old and hollow, and situated on bare slopes or rocky level ground. Now it is well known that when trees have attained their term of longevity, the upper branches sicken and die off, and generally the crown becomes spare and weak. In the case of trees growing in isolation, these circumstances are aggravated, owing to the fact that the trunk and lower boughs are constantly bathed in light and the formation of dormant buds consequently checked or entirely prevented. In places where there is enough top soil to cover the callum of the roots, buds situated round this portion of the trunk of teak trees retain their vitality till an advanced age ; but on bare hill sides or rocky level ground the callum is invariably exposed to the full influence of sun light, and after the trees have reached the downward phase of life, it will be the exception, and a very rare one, to find dormant buds in the lower part of their trunk. And in these rare exceptional instances of such trees reproducing themselves from the stool, the number of shoots in a clump will rarely exceed three, and it will probably be found that 50 per cent of these are the result of adventitious buds."

Simple as the plan may seem, the cutting of poles by selection which the present condition of some of the teak-producing reserves necessitates, is far from an easy undertaking, and requires much practical training and experience.

Subordinates are, however, being instructed in the work, and in due time it will be possible to carry on these operations on a large scale, securing both the improvement of the forest growth and the development of the revenue.

Weeding or clearing of natural seedlings.

21. This work has been almost entirely confined to the Korai block under protection from fire. In this forest, over three lakhs of seedlings of timber trees were cleared of obstructions to their growth during the rains of 1875. That the undertaking has been attended with considerable benefit to the forest, is a point on which most officers who have watched the progress of events are agreed. The chief objection is that the work, and consequently the results, must be scattered over large areas; but this results from the irregular state of the forest, and unless natural reproduction is aided by artificial means, the progress in changing that condition must be excessively slow. Similar operations in Punassa are advocated by the Officer in charge of that reserve.

Artificial filling up of blanks.

22. The only work done under this head has been the extension of the sowings at Korai. The young trees from the sowing of 1873 made a good start in the rains of 1875, and it may be expected that by the close of the rains of 1877 they will have complete possession of the ground. In the sowing of 1874 there is a fair show of seedlings of teak and seeshum. In the sowing of 1875 the teak will not appear till the coming monsoon sets in, and consequently the crop is as yet far from complete. About 72 acres have been prepared for sowing in the rains of 1876. Similar operations will be started in Moharli reserve in the rains of 1877, and in Punassa as soon as arrangements can be made for meeting the demand for labour.

Cutting of creepers.

23. No work was done under this head by special agency during the year, but the subordinates during their tours have in many cases done much towards the destruction of creepers. In Ahiri it was thought desirable to watch for the result of the work previously

carried out, before incurring further expenditure. It now appears that the results were more favourable than was at the time expected, but nevertheless success has not always been complete, and the Deputy Conservator, who is familiar with the plan adopted and results attained in Oudh, is of opinion that in some localities nothing short of rooting the creepers out will prove effectual. The work will now be re-commenced and pushed on till the entire area is cleared. The method adopted at Ahiri was that practised years ago in Oudh—the creepers being cut down to the ground and the crown of the roots well battered with the back of the axe.

Experimental cultivation of Eucalyptus globulus.

24. In Nagpur this species cannot be successfully raised, except at an enormous cost and under favourable conditions of soil only rarely to be met with. At Pachmarhi, Seoni and Saugor, trees have been raised, and are rapidly increasing in height, but owing to the peculiar tendency of the tree in these Provinces to clear its lower branches with undue rapidity, they are deficient in girth and the trees have consequently to be propped. Unless this can be avoided there is no chance of their ever succeeding on a large scale. Some further experiments are, however being tried with this and several other species of eucalyptus, which should lead to definite conclusions as to whether or not any of the varieties are adapted to these Provinces.

Experimental cultivation of mahogany.

25. The trees previously put out at Moharli and Nagpur continue to thrive, and from the small batch of seed supplied by Government last cold season, a good batch of seedlings has been raised at Nagpur and Ahiri.

Preparing teak seedlings for transplanting, by cutting back the tap-roots.

26. In accordance with the wishes of Government these experiments were renewed at Ahiri and Korai. In Ahiri the experiment was with 300 trees a little over a year old and 3 to 5 feet in height, the roots were cut back 6 inches below ground; the trees continued to live till the dry season set in, when 200 died off. The remaining 100 are doing well. At Korai a large number of seedlings that had come up in 1874 were operated on in the rains of 1875. The seedlings were about 8 inches in height and their roots were cut back about 6 inches below ground. Here the experiment was a perfect success, the specimens subsequently taken up and examined having a fine development of lateral roots. It should, however, be noted that in Ahiri, teak naturally developes an abundant supply of lateral roots, and I believe that in all free soils, like that on which the experiment was carried out at Korai, teak has a smaller development of tap and a greater development of lateral roots than in the more stiff and compact soil.

Valuation surveys.

27. The enumeration of timber trees in Ahiri completed in 1871 took into account teak and seeshum only, but the Ahiri forest contains a considerable quantity of large timber of other species for which a demand may shortly be expected. Valuation surveys have accordingly been commenced with the view of determining as closely as possible the actual quantity of marketable timber available. The work is being directed by Mr. Thompson, whose intimate knowledge of the forest enables him to lay down the survey lines so as to ensure their giving fair averages for the whole forest. With the other work in hand at Ahiri, however, it is doubtful whether a sufficient length of survey lines to give reliable results can be gone over before the close of next season.

Lac cultivation.

28. The artificial cultivation of lac has been attempted in several of the state forests, where trees suitable for its production were available. The result of the undertaking has been very varied, which is not always to be accounted for by climatic influence or the general

suitability, health or size of the trees used. The most decided failure, for instance, was at Ahiri, where there are splendid koosum trees, and the climate appears to be one of the best adapted to the insect in these Provinces. The application of seed lac to some of the same trees under the Deputy Conservator's own supervision six months later appears to have been attended with perfect success.

The following table exhibits the number of trees to which seed lac was applied during the year under report :—

Name of Forest or Division.	Number of trees stocked.		Cost.			Remarks.
	Koosum.	Other species.	Rs.	A.	P.	
Central Division ...	...	7,300	54	5	0	Exclusive of the monsoon stocking, which failed.
Western Division ...	2,589	2,841	249	10	0	Generally successful.
Beemaram ...	1,123	46	138	8	5	1,012 Koosum trees stocked in July failed. November stocking a decided success.
Maharli ...	..	3,671	332	4	4	Doing well.
Saugor Division ...	...	7,051	19	4	6	A large proportion failed in hot weather.
Eastern Division ...	1,035	...	163	11	3	
Bijeragogarh ...	20	1,329	...	...	...	Some Palas injured by frost not doing well.

Mr. Jacob, the officer in charge of the Central Division, writes despondently regarding the prospects of success at Korai. The trees stocked in November 1874 appear to have become very sickly; but if they give anything approaching a decent crop in November 1876, this will be a matter of little importance, for their branches will then be trimmed off, and once freed from the insects will, it is believed, soon recover. In the same locality the stocking of the rains of 1875 failed entirely, and it has been found that the cold season is by far the best for propagation, not only from the absence of rain to wash off the insects, but because the seed lac procurable at that time is superior. In Moharli the propagation, both of the rains and cold season of 1875, appears to have been attended with success. In the Western, Saugor and Northern Divisions, the success attending the propagation is yet uncertain, as the trees have not been inspected since the cold season, but it is certain that on a large number of the treesthe insects did not take. Many and diverse are the opinions expressed regarding the causes of failure and the prospects of success under different conditions; but we do not as yet know sufficient regarding lac cultivation and its requirements to lay down any definite rules for guidance.

31—7—76 I H b.—44—570

Section V.

Yield and working of the Forests.

29. The North Phen, South Phen, Motinala, Keolikhapa and Topla reserves have remained closed against cutting, and it is probable that some two or three years will elapse before the department will be able to work them in such a manner as to secure the largest possible profit on the out-turn. In the Bunjar reserve no timber has been cut, owing to the large stock of dead wood found in the forest. The felling operations in this forest have therefore been confined to the bamboos for rafting purposes.

Sigrampur has remained closed, in consequence of the very small out-turn of marketable material that it is at present capable of yielding Burala might have given to the market a large supply of bamboos, but it was thought better to await the rise in prices that is shortly inevitable. Bori too remained closed, a few bamboos only having been taken out to test the cost of transport.

30. About five-eighths of the Moharli forest has been closed against the cutting of wood, but the whole area was kept open for the removal of dry wood and bamboos. No wood of the reserved kinds was cut, as our object at present is to secure as complete reproduction as possible of the more valuable species, and the soil requires to be prepared by protection before this can be hoped for on a large scale. Moreover, Beejasal, the most important species, only seeds periodically, and no seed has as yet been produced since protection from fire was commenced. Restriction on the bamboo cutting was not considered necessary, but should the demand continue to increase as it has done, it will become necessary to divide the forest into four blocks and introduce a four year rotation. In this forest it was desired to undertake the cutting of all wood by Government agency, but it has been found that there is a difficulty in the way of attempting this at present. The wood taken from this reserve is almost entirely cut by residents of the forest, from whom it is purchased by the exporters, a circumstance which would of course facilitate the introduction of the desired change; but the difficulty of obtaining the requisite amount of labour at the desired time is not at present to be overcome. The wood cutters have other vocations, and devote themselves to wood cutting only when it suits their own convenience. Under these circumstances, the only course that can be adopted is gradually to reduce the area in which felling is allowed till the cuttings are brought within the narrowest limits, and then to introduce a system under which different blocks will be opened for cutting in rotation, small areas being set aside for special treatment, such as the eradication of inferior or worthless species, and cultivation of those most in demand, till the land is fully cropped and the department is in a position to meet the demand from smaller areas.

31. In the large reserves of the Western Division, with the exception of the areas under protection from fire, the cutting of unreserved woods and bamboos by purchasers has been allowed. An attempt was made to cut such produce by departmental agency for sale at depots in the forest, but it was found that while the department was put to the expense of cutting and collecting, the produce scarcely commanded a higher price than it would standing in the forests,—a circumstance which is due to the bulk of such produce being taken by consumers themselves, who are their own wood cutters and collectors, but attach no value to the labour bestowed on the work. Here too, though for a different reason it will be necessary to adopt the course indicated as expedient in Moharli. With this exception that the demand being more local, it will be necessary to divide each large forest into several circles. Teak is the most valuable product of these forests and will bear heavy charges on account of

cutting. The only teak felled was, as previously shown such as was of bad growth and incapable of improving. The cutting was carried out by department agency, and has as its chief object the production of a more valuable crop.

32. From the reserves in Saugor a few teak poles were removed, and the people living in the vicinity of the forests were allowed to obtain cut wood for their houses and agricultural implements and to remove fuel. The demand is at present too small to necessitate inconvenience to the residents of villages bordering on the forest by special restrictions.

33 No produce has been cut in the Erjhur and Dhuga and Pandratola reserves, as the requirements of these tracts have not yet been fully considered; and the Hathi Bari and Kanterah-nala reserves have remained closed in consequence of there being no demand for the produce that it would be possible and desirable to remove from them.

Yield of the Forests.

34. With the exception of large timber, the yield of the reserves is at present regulated by the demand and the labour market. The greater portion of the yield is exhibited by Statement F and Form 26 : these statements do not, however, include the produce consumed by *bonâ fide* residents of the forest. There has been a considerable increase in the out-turn from Moharli of all classes of produce, except bamboo baskets, the number of which exported falls considerably short of that of the previous year. The increase in the out-turn of bamboos is chiefly due to the extension of the area of the reserve, and partly to a steadily rising demand ; both bamboos and grass were taken for export to the Wardha and Woon districts and to the Nizam's territory.

Timber operations.

35. In the Northern Division 430 logs of Sal, 6 of Saj, and 10 of Beejasal containing 19,902 cubic feet were logged and landed at Kisli from the Bunjar forest, an average distance of seven miles, at three annas, two and one-sixth pie per cubic foot. On the existing road there is a very stiff ghat which causes considerable loss of time and consequent increase in expense. As soon as the forest maps are available, the laying out of a new line with a gradual and easy gradient will be commenced. From Kisli to Tilri were transported by road 236 Sal logs containing 6,240 cubic feet at a cost of two annas per foot. On this road are several bad nalas which are difficult for carts with heavy loads, and if it has to be used continuously for timber transport, it will be desirable to have substantial bridges thrown across them. This should not, however, be attempted as long as there is hope of the "Gungur-nala" leading from Kisli to the Bunjar, and that portion of the Bunjar between the junction and Tilri being made practicable for timber transport. It will probably be two or three years before the measures that should be adopted can be decided on ; but experiments in utilizing the "Gungur-nala" will be commenced in the coming monsoon. Should these channels prove practicable, there will be unbroken water communication from the edge of the Bunjar reserve to Mandla. From Tilri to Mandla were conveyed by water 451 Sal logs containing 12,915 cubic feet, at a cost of annas 3. 1⅔ per cubic foot. This portion had been improved by cutting channels through some of the barriers, which greatly facilitated the work of rafting ; and since the close of the rains, the bed of the river has been cleared of trees which were the cause of the few losses that did occur last year. Much may still be done for the improvement of this portion of the river as a channel for timber transport ; and as such works are of a permanent character, and will yield fruit in reduced expenditure on transport, the expediency in proceeding with these improvements is beyond doubt, and the work should be carried on as actual requirements are ascertained. To this matter

too much importance cannot be attached, for where difficulties exist Dhimars alone can undertake the work of rafting, and as long as so small a section of the people know that they have the work entirely in their own hands, they can command their own rates.

The 12,915 cubic feet of Sal brought down the Bunjar last rains was conveyed by Government carts and cattle from Mandla to Sakrighat (distance six miles) during the cold season at a cost of one anna and two and a half pie per cubic foot. The above rate equals nine and a half annas per ton per mile, which, considering the size of the logs and the shortness of the distance, is not excessive. The expediency of constructing a tramway from Mandla to Sakri was at one time mooted ; but here again, we are deterred from action by the faint hope of being able to make a passage to the barriers between those places in the Nerbudda, and thus not only dispensing with the land carriage but avoiding the cost of taking out of the river and loading at Mandla, unloading and putting in to the river at Sakri, and the re-construction of rafts. If practicable, the opening up of water communication here would entail a very heavy expenditure ; but the advantages would be very great, as it would be the out-let of the produce from the whole of the forests south and east of Mandla. From Sakrighat to Goarighat, near Jubbulpore, were transported down the Nerbudda 8,476 cubic feet of Sal at annas 2. $8\frac{3}{5}$ per cubic foot : this rate appears high, when it is remembered that Sal sleepers were previously taken down at about one anna per cubic foot ; but some allowance must be made for the difference in the size of the material.

The foregoing paragraphs on timber operations are connected with the extraction of timber from the Bunjar Valley forest. The cost per cubic foot of transport from this forest to Goarighat is given as follows :—

From forest to Kisli by land 7 miles	Rs.	0	3	2·17
Do. Kisli to Tilri do. 8 miles	,,	0	2	0
Do. Tilri to Mandla by water 30 miles	,,	0	3	1·4
Landing at Mandla	,,	0	0	7·2
From Mandla to Sakrighat 6 miles	,,	0	1	2·5
Do. Sakri to Goarighat by water 75 miles ...	,,	0	2	8·6
Landed and placed in depot	,,	0	0	6·4
Total	Rs.	0	13	4·27

Even at the foregoing figure, which includes all charges, except a share of the Divisional officer's pay, but a trivial portion of which is debitable to the work, a moderate profit on the timber will be secured, the average selling rates up to date having been Rs. 1-6-0 for round and Rs. 1-10-2 for squared timber ; but, as already shown, there are several instances in which reduction in the cost of transport may be looked for, and I venture to hope that in the course of a few years the value of the Bunjar Sal will be raised to from eight to twelve annas per cubic foot standing in the forest.

In the same division, 892 sleepers were also cut, and 153 teak logs containing 2,780 cubic feet that were lying in the Jagmandul forest were brought to Bisandur, from whence they will be floated to Mandla and on to Goarighat during the coming rains ; and 8,193 Sal sleepers were carted from Goarighat to Jubbulpore and despatched by rail to Wardha Valley State Railway.

36. In the Southern Division 10,545 logs and pieces were brought to depot at Alapelli, at a cost of annas 2. $7\frac{1}{2}$ per cubic foot, inclusive of all charges. At the Alapelli saw-mills 67,922 cubic feet of sleeper squared logs and scantlings were cut, at a cost of three annas and seven pie per cubic foot. A small quantity of timber was despatched to Coconada to ascertain

the cost at which Ahiri produce could be landed there and test the market; but the result of this experiment cannot at present be given. The demand for sleepers for the Wardha Valley State Railway was completed shortly after the close of the year. The number delivered during the year was 28,622. The other timber operations of this division were the despatch of about 6,000 cubic feet of timber up the Wynganga and Kanhan rivers to Kamptee, and the forwarding of a small quantity of scantlings and planks towards Warora: full particulars of these operations and their cost are given in Statements 27 and 27A.

The following table exhibits the rates now current for rafting teak-timber up stream from Ahiri. It does not include establishment charges, which are yet heavy, amounting to about 30 per cent, but by degrees less supervision will be necessary. The rates for the larger scantlings are susceptible of further reduction; but even the present current rates show a considerable decrease in the cost of transport. The maintenance of a small amount of Government carriage has brought the rates for transport by hired carts down to 0·8 pie per cubic foot per mile.

		From A'pelli to Chichgoondi, 8 miles down stream.		From Chichgoondi to Kirmirri, 30 miles up stream with several barriers.		From Kirmirri to Bullarpur, 46 miles up stream without obstructions.		From Bullarpur to Tulana, 46 miles up stream with several obstructions.		Chichgoondi to Borighat, 40 miles up stream with barriers.		Borighat to Tidighat, 140 miles up stream.		Tidighat to Kamptee, 40 miles up stream.		Total	
		A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.
Route to Tulana, 4 miles from Wardha Valley State Railway Terminus.	Pieces over 15 c. ft...	0	4	1	6	1	6·4	1	11	...		...		...		5	3·4
	" 10 c. ft...	0	3·2	1	3	1	1·8	1	6·4	...		...		...		4	2·4
	" 5 c. ft...	0	2·4	1	0	0	9·2	1	1·8	...		...		...		3	1·4
	Pieces under 5 c. ft...	0	2·4	0	9	0	4·6	0	9·2	...		...		...		2	1·2
Route to Kamptee.	Pieces over 15 c. ft...	0	4	...		...		...		2	0	5	10	1	8	9	10
	" 10 c. ft...	0	3·2	...		...		...		1	8	4	8	1	4	7	11·2
	" 5 c. ft...	0	2·4	...		...		...		1	4	3	6	1	0	6	0·4
	Pieces under 5 c. ft...	0	2·4	...		...		...		1	0	2	4	0	8	4	2·4

37. In the Western Division the produce at present being cut is small wood, adapted only for the construction of native houses, and is chiefly used by the inhabitants of villages at no great distance from the forest but distributed over a wide extent of country.

Under these circumstances, to collect the produce at large central depots would be a mistake, as it would result in its being carried double the distance necessary before it reached the places at which it would be consumed. When the out-turn of produce that will bear long carriage is in excess of the local demands, the case will be different, and it will hereafter probably pay well to collect the surplus for export at large central depots, where dealers can, without trouble,

obtain large quantities in one place ; but as the local demand is at present in excess of the out-turn, it has been considered advisable to confine our operations to cutting and collecting in the forest. As already shown, the attempt to cut and collect departmentally produce other than teak was abandoned, as at present unremunerative, and the timber operations were confined to the cutting and collection of the produce referred to under the head of improvement cuttings. The out-turn was as follows :—

Cut and collected in	Punassa,	teak poles	...	53,084
Do.	do.	Raja Borari do.	...	57,812
Do.	do.	Saoligarh do.	...	6,033
Do.	do.	Kalibheet do.	...	4,717
Do.	do.	Khamapur do.	...	2,045
Do.	do.	Bowergarh do	...	1,869
		Total teak poles	...	125,560

But these figures scarcely convey a correct idea of the amount of work done, as many stumps, which from the disadvantages under where they had grown up yielded no marketable produce, had to be cut off.

38. In the other divisions no timber operations were carried on.

Head II.—Unreserved or District Forests.

39. The area of the unreserved forests is given in Statement B. The resumption of six clearance leases in Bhandara, Jubbulpore, Saugor, Seoni, Chhindwara and Nimar has added to the area at the commencement of the year 17 square miles and 595 acres. The areas excluded or transferred, are as follows :—150 square miles being the estimated area of the block transferred to the Moharli reserve in Chanda ; 40 square miles and 382 acres included in the Erjhur and Dhuga reserves in Wardha ; 5 acres in Balaghat given in compensation for land taken up for the Civil Station ; 17 square miles and 139 acres in detached plots given out on lease in Mandla ; and 197 acres in Nimar, the ownership of which was disputed, but which finally proved not to be the property of Government. It was not possible in the past year to deduct from the individual districts of Balaghat and Mandla the exact area transferred from each to the reserves, and the statement for that year was balanced by a deduction at the foot. In the statement for 1875-76 this has now been set right, 79 square miles and 536 acres having been deducted from the Balaghat unreserved forest area, and 162 square miles and 91 acres from that in Mandla.

In accordance with the orders of the Government of India on the last year's report, I will endeavour, in concluding the remarks on each district, to explain, as far as practicable, the fluctuations exhibited by this Statement.

Cause of increase or decrease of revenue

40. The following is a Statement of the receipts from the unreserved forests from the time that their management as forests was first commenced :—

Districts.	1865-66	1866-67	1867-68	1868-69.	1869-70.	1870-71.	1871-72	1872-73	1873-74	1874-75	1875-76.
	Rs.	Rs	Rs	Rs.	Rs	Rs	Rs.	Rs	Rs.	Rs	Rs.
Nagpur ...	16,418	15,886	20,906	19,271	18,555	14,230	20,728	19 878	21,353	12,243	15,805
Bhandara ...	1,668	14,599	30,865	25,535	25,124	28,264	29,342	29,760	31,461	29,466	36,487
Chanda ..	8,393	15,518	34,425	23,822	27,882	32,735	27,355	26,350	22,572	21,772	23 059
Wardha ..	5,047	7,000	8,711	8,552	10,121	11,308	11,824	7,165	9,107	8,525	10,145
Balaghat ...	...	...	20,400	18,411	16,696	15,044	17,434	21,723	21,293	22,587	26,163
Sironcha ...	2,786	11,958	10,645	11,877	8,110	15,528	16,860	12,642	38,521	3,037	12,134
Jubbulpore ...	420	1,995	16,418	16,118	7,935	18,682	8,459	24,155	17,842	19,836	18,169
Saugor ...	6,838	12,530	12,870	12,925	10,927	27,366	27,345	23,364	26,778	43,720	34,738
Damoh ...	8,292	10,013	9,380	8,886	10,940	11,947	13,164	12,615	25,883	25,136	27,619
Seoni ...	11,456	13,321	10,560	20,008	22,215	29,642	52,076	44,209	35,569	34,094	34,757
Mandla .	1,588	5,970	10,059	7,193	9,809	19,443	24,695	34,063	24,782	26,173	23,219
Betul ..	9,342	17,440	13,348	12,183	23,176	19,829	20,046	31,706	49,155	46,418	23,372
Chhindwara ..	3,327	14,104	8,818	15,764	13,116	15,934	17,631	15,218	16,369	21,622	29,065
Hoshangabad ..	14,066	20,975	16,328	16,962	20,456	18,550	15,204	22,532	38,858	42,084	40,222
Narsinghpur ..	1,331	1,784	3,193	3,426	2,850	3,375	5,593	8,149	9,460	9,926	11,462
Nimar ..	8,672	13,223	13,940	9,650	34,011	43,506	47,515	40,310	38,557	47,51[illegible]	46,742
Raipur ..	...	890	18,739	14,135	45,034	41,028	26,590	28,629	25,264	33,394	39,04[illegible]
Bilaspur ...	4	3,635	5,694	4,337	7,933	5,438	16,981	5 486	11,510	12,101	13,466
Total ..	99,648	1,82,841	2,72,299	2,49,058	3,14,890	3,71,349	3,98,842	4,07,961	4,64,334	4,59,655	4,65,668

41. In the management of the Nagpur forests there is great diversity of system,—the commutation, license, and leasing systems, being all in force.

Nagpur.

The 14 kinds of trees which are supposed to yield the best building wood are nowhere allowed to be cut without the special sanction of the Deputy Commissioner. The inhabitants of forest villages are allowed to commute. In the Ramtek forests and the two large blocks in Nagpur, comprising the best portion of the forests, 37 kinds of trees which stand next in importance to those last referred to, and bamboos, may only be cut and charcoal made, on obtaining a license from a malguzar or forest official especially authorized to issue such license, while the right to collect dues at fixed rates on grass, firewood and other minor produce and for grazing is leased. In the remaining area of the forest, which is comparatively poor, the right to collect grazing dues, and dues on all produce except the 14 reserved kinds of wood, is leased. The establishment entrusted with the watch and guard of the forests and the checking of the produce removed has nothing to do with the receipts, the licenses being issued either by malguzars, who receive a percentage as payment, or by special men deputed for the purpose. It appears worth considering whether in tracts in which an agency for collecting dues on certain classes of produce is maintained it would not be advantageous to abolish the partial leasing system. There may however be objections to this, of which I am not at present aware.

The decrease in the receipts for 1874-75 resulted from the efforts made to check excessive cutting of the more valuable products. The increase in the past year results from the proceeds of teak thinnings. The localities in which such operations can be undertaken must, however, now be rare, for as regards teak poles the forests were in previous years worked far in excess of their capabilities.

42. In this district the local consumption is commuted for, while the dues on exports are collected on the Kham Tahsil system. With the view of increasing the revenue and checking waste, a proposal for several changes in the commutation system has been submitted by the District Officer for the Chief Commissioner's consideration. The Kham Tahsil system, which was only introduced after some months of 1874-75 had elapsed, appears to have worked satisfactorily, the receipts from exports having risen considerably.

Bhandara

The three teak producing plots in Pertabgarh, Tirrora and Ambagarh, aggregating 2,381 acres, have continued to be protected against cutting. The attempt to manage the Zamindari and unreserved forests collectively did not prove satisfactory, and has been abandoned.

During the year under report it was not possible to depute a Forest Officer to select reserves in this district, and it is feared that some little time must elapse before an officer can be spared for the work.

The revenue has for a lengthened period been particularly steady, exhibiting a gradual rise. The change in the arrangements for collecting the dues on exports which took place after the commencement of 1874-75, as might be expected, caused a slight decrease in the receipts for that year; but the rise in the past year is chiefly due to this change. About Rs. 1,000 of the increase in 1875-76 resulted from enhanced payments by Zamindars on account of the forests they hold.

43. During the year the leasing system partly dispensed with in 1874-75 was abolished. The commutation system has remained in force for inhabitants of the district who chose to avail themselves of it. The collection of the higher forest duty paid by non-

Chanda

commuters has been managed on the license system. The net results from introducing the license system have not been as good as was hoped for ; but the change is nevertheless satisfactory, and the very fact of the receipts not rising in proportion with the rates charged, indicates that the resources of the forests have to a certain extent been husbanded, whereas under the leasing system every effort was made to get as much out of the forests as possible within the term of the lease. The extension of the license system has not influenced the revenue for the whole year, the revenue for the first three months having partly resulted from the old leasing system and been credited in the accounts of the previous year. It therefore seems probable that the change will show better results in the current year.

The fall in the revenue in 1873-74 was due to the transfer of the control of the Moharli Forest to the Forest Department. The slight decrease in the succeeding year resulted from the partial abolition of the leasing system, under which system the accounts for one year included part of the revenue from this source for the succeeding year,—the leasing year running from June to June—while, in the same manner, the revenue for 1875-76 was kept down. The transfer of the Moharli forest has resulted in a separate item of revenue, which has already risen to Rs. 12,000. Taking these facts into consideration it appears evident that the receipts from the present unreserved forest area must have gradually increased, but the result of the current year's administration will give more satisfactory evidence on this point.

Wardha

44. In the Wardha District the license system is in force. The licenses are issued by malguzars, who receive a percentage on the revenue collected by them, while the removal of the produce is checked by the Forest Establishment. The Wardha forests are chiefly drawn on for fuel and grass, building wood being generally obtained from other sources better able to supply it. Grazing and sale of grass are at present the main sources of revenue. There can be no doubt that, were it not for the difficulty in cutting the grass in large quantities before it begins to dry up, fodder grass might be made a very important item of revenue from many portions of these unreserved forests ; but the difficulty of obtaining labour appears for the present insurmountable.

In former years the right to levy dues on forest produce was leased, and the revenue steadily rose till in 1871-72 it amounted to Rs. 11,824. In 1872-73 the lease was put up to auction rather late in the year, and it is to this circumstance that the decrease of revenue in the succeeding year has been attributed. In 1873-74 the leasing system was abolished, and the revenue rose, notwithstanding that the receipts under the license system could only have been for part of the year. It would be difficult to assign a definite reason for the fall in the receipts in 1874-75, or for the rise in the past year ; but the general impression gathered from the district report is, that were the issue of licenses in the hands of persons who had a greater interest in the revenue, the financial results would be better. As matters stand, it is believed that some of the license vendors have forests of their own, on which they prefer that purchasers should draw. Instances also appear to be on record of these men accepting dues without issuing licenses whereby check over the receipts is evaded.

Balaghat.

45. No change in the system of management has taken place. The District Officer reports that where Government and private forests adjoin, a 10 feet line is being cleared along the boundary through the agency of the malguzars, who willingly undertake the work for the sake of the wood thus made available to them. Efforts have been made to prevent indiscriminate cutting on the slopes and hill sides, which once denuded, are most difficult to re-stock.

Mr. Fisher recommends the reservation of some large patches of Sal in the Jamunia valley which appear hitherto to have escaped notice, and also the forests on the Bhumari plateau which produces some fine Beejasal.

Regarding the fluctuation in the revenue, I extract the following remarks from the District report :—

1867-68.—The revenue was Rs. 20,861-14-10. The district was formed in this year, and I can give no further account of the year's work than that Major Loch introduced the farming system. He says in his report—'I was obliged to have recourse to the native system, and instead of taxing each cart for each trip made to the jungles, to give contracts per cart for the whole six months *i. e.*, from January to June, at a fixed scale of Rs. 3.' "

" 1868-69.—The revenue was Rs. 18,411-8-0. Major Bloomfield reported that the decree of Rs. 2,450-6-10 was only apparent, as balances of previous years amounting to Rs. 3,165-8-0 were included in the collections for 1867-68; if that sum were deducted from the collections of 1867-68, an increase of Rs. 715-1-2 would have appeared. The system of collection and farming remained unchanged."

" 1869-70.—The revenue was Rs. 16,696-13-3, showing a decrease of Rs. 1,704-10-9. It would appear from the report though that Rs. 1,612 were erroneously credited to land revenue being the amount realized from resumed villages, in which case the income should have been Rs. 18,308-13-3, leaving a decrease of Rs. 103 only. The system of management remained unchanged.

" 1870-71.—The revenue was Rs. 14,956-12-8. The decrease Rs. 1,740-0-7 resulted from the grazing dues not having been credited before the end of the year. The collection of grazing dues was made direct and not leased as in previous year."

" 1871-72.—The revenue was Rs. 17,434-13-11. It is now stated that Rs. 1,653 were in 1870-71 erroneously credited to land revenue, and that this sum, if brought to account, would raise the revenue in that year to Rs. 16,609-12-8, leaving an increase for 1871-72 of Rs. 825-1-3, principally derived from grazing dues. But there must have been a falling off this year of some Rs. 900, as the grazing dues not credited in 1870-71 were brought to account.

The commutation system was introduced and the forests worked under direct management this year."

" 1872-73.—The revenue was Rs. 21,799-15-8, showing an increase of Rs. 4,365-1-9, accounted for as follows :—

(1.) Rs. 1,000 received from D. P. W. for timber to be supplied.
(2.) Small balance of previous year realized.
(3.) Increase in grazing dues.
(4.) Increase in number of commutation licenses issued.

The commutation and farming systems were followed under direct management.

The area of the forests is stated to have been 1,034 square miles and 134 acres."

" 1873-74.—The revenue was Rs. 21,852-5-7, showing a small increase of Rs. 52-8-11. Mr. Jones' commutation system was introduced and was in force throughout the year. The Kurola and Katangi pargannas were added to the district during this year, and though the area of forest was only raised by square miles 42, 493 acres, a large population was added to the consumers, and the income should have risen. A comparison with the forest returns of the Seoni District for 1872-73 and 1874, would perhaps elucidate the question as to whether we lost much by the introduction of the commutation system or not."

"1874-75.—The revenue is Rs. 22,764-3-11, showing an increase of Rs. 911-14-4, mainly caused by the Department Public Works taking timber from us for the new offices The system of management was unaltered.

Area returned at 1,066 miles, 495 acres."

The transfer of Katangi from the Seoni District may not have caused so large a diminution in the Seoni revenue as was supposed, but without information regarding the actual revenue derived from the tracts in question prior to their transfer, which is not at present at my disposal, it is impossible to say what was the actual effect of the change of system on the revenue. It is, however, certain that prior to the transfer, a portion of the population in the Katangi Tahsil drew some of their supplies from the Balaghat forests.

Sironcha.

46. The report furnishes little to record regarding forest management in this district. There have been great fluctuations in the revenue, regarding which the following explanation may be given. Up to 1870 the forests were leased out. In this year a system of commutation was introduced, which resulted in an increase of revenue in 1870-71, and a still further increase in the succeeding year. In each of these years about Rs. 3,000 was recovered by sale of dead teak timber. In 1872-73 no teak timber was sold, the commutation rates were reduced, and cattle disease reduced the grazing fees, the receipts accordingly fell materially. In 1873-74 the sale of a large quantity of dead teak timber raised the revenue to a high figure. In 1874-75 the southern portion of the forests was transferred to Madras, and only a small quantity of teak wood was sold, the value of which remained outstanding at the close of the year. In 1875-76 the receipts were increased by the recovery of an outstanding of Rs. 4,600 on account of the previous year, and the realization of Rs. 5,518 by the sale of teak wood during the year.

Jubbulpore

47. During the past year the Nimar system has continued in force in Jubbulpore and Sihora, and the farming system in Murwara. No cutting has, however, been allowed in the seven blocks mentioned in paragraph 65 of the past year's report.

Owing to the raising of the rates paid by iron smelters for the right to take fuel, private forests have been more resorted to. The Government revenue from this source has, it is true, decreased by a small sum, but this is no loss, for it is evident that at the former low rates the cuttings of fuel for smelting resulted in damage to the forests, in no way compensated for by the money payment derived.

The District Officer observes that though the license system has defects, it has worked fairly well and is now understood by the people. It has had the effect of decreasing the demand on the Government forests without causing a decrease of revenue. The demand withdrawn from the Government forests has been transferred to the malguzar forests, which are, for the present, better able to meet it.

No bid was made for the lac farm of the district, and no long leases of small blocks of forests for the production of lac have been given. The District Officer reports that the depreciation in the value of lac has quite neutralized all his efforts to induce people to take up its cultivation.

The following is the explanation furnished by the District Officer regarding the fluctuations in the revenue :—

"1865-66.—Rs. 420. The work of demarcation of forest was only commenced in 1865-66; in that year some few plots were made over to the district authorities, and they were let out on usufructuary leases, realizing Rs. 360. Rs. 60 were collected as fines."

1866-67.—Rs. 1,995. In this year the Government wastes were more fully demarcated, and contractors having done well in the previous year made higher offers for the usufructuary farms, so that Rs. 1,995-2-0 were collected."

"1867-68.—Rs. 17,649. The usufructuary lease system was still adhered to; 160 tracts were this year added to the reserves. Some of these were very valuable, and contractors were eager in competing for the farms, so that the Government revenue made a great advance."

"1868-69.—Rs. 16,217. There was no change of system. Complaints had all along been more or less rife as to the oppressive nature of the forest duties on forest produce, but no alternative system had then been found to meet the difficulty. Discussion was also then commencing as to whether the usufructuary lease system was really advantageous, in the matter of preserving forests from excessive cutting. Endeavours were made to check the propensities of contractors in this direction."

"1869-70.—Rs. 7,953. The same system continued, but this year the whole Singorgurh illaka west of the Hiran river was transferred to Damoh. In this tract were many of the most productive of the Jubbulpore jungles."

"1870-71.—Rs. 18,091. In this year a system was introduced of coming to terms directly with the villagers themselves for the products they required from Government forests. It was called the commutation system, and the principle was that each house-owner should commute for his annual requirements by a yearly payment of one lump sum."

"1871-72.—Rs. 10,916 Commutation system continued, but experience showed that it required very careful working, otherwise collecting officials were apt to make every one pay commutation, whether he drew his supplies from Government jungles or not. To this more careful working and to a reduction in the rates at which commutation was assessed, the decrease in revenue in this year was attributed."

"1872-73.—Rs. 17,596. In this year the rates of commutation were again revised and raised, bringing about a rise in the income realized."

"1873-74.—Rs. 17,402. For half the year the commutation system was adhered to, and in November the ticket or Nimar system was introduced The changes did not affect the income collected in that year."

"1874-75.—Rs. 19,836. The working of the ticket system was not very judicious in one of the Tahsils, the income therefore ran up peculiarly high. The increase was abnormal, and in the next year a considerable portion of it had to be refunded."

"1875-76.—Rs. 18,168. The same system was in force, and its working has been fully commented on in the body of the report."

Saugor.

48. In the Saugor District the revenue is collected on four different systems,—commutation, license, leasing for minor forest produce, and an arrangement under which the dues on produce brought into large towns are collected at the Octroi posts. The first and third of these are of general application, the second is confined to certain portions of the forests, the produce from which does not pass Octroi posts, while the fourth is only applied to produce brought into the large towns of Rehli, Saugor, Garakota, Deori and Khorai.

In the report for the previous year Major Loch raised certain objections to the commutation, and advocated the substitution of the license system; but after acquiring a more thorough knowledge of the district and its forests, he is of opinion that the license system could not be introduced without unduly increasing the expenditure on account of establishment. In the collection of dues at Octroi posts some difficulty appears to result from the fact that the produce of private

forests is brought to the same markets, and hence it is difficult to discriminate between the produce that is, and that which is not liable to duty.

The eighteen tracts aggregating 38,435 acres referred to in paragraph 70 of the report for 1873-74, have continued closed against cutting. Major Loch urges the expediency of these and some other important forest blocks being examined with the view of selecting permanent reserves. The necessarry steps to give effect to the District officer's suggestions have been taken, and in due course definite proposals will be laid before the Chief Commissioner.

The District Officer reports that there is great difficulty in inducing people to take long leases of forest blocks for the production of lac; four blocks only aggregating 1,377 acres were thus leased during the year.

The principal fluctuations in the revenue may be explained as follows:—Prior to 1870-71 usufruct leases were granted, but in that year commutation was partially introduced, the result was larger receipts in that and the succeeding year. In 1872-73 the unreserved forest area was reduced by the formation of the Huthkoo, Ranjir and Ranipoora reserves, which resulted in a fall in the revenue. In 1873 the commutation system became general, and brought in larger receipts in 1873-74; at the close of this year there was an outstanding of Rs. 7,817, which enhanced the receipts in 1874-75, the actual revenue on account of which was barely Rs. 36,000. The past year shows a slight decrease, on account of 39 villages having withdrawn from commutation.

Damoh

49. The forests were managed on the same system as was in force in the previous year. To check the unauthorized removal of produce into other districts, and to check the evasion of grazing dues, a few more nakas were established along the Jubbulpore and Narsinghpur border, and arrangements were made for counting the cattle at these posts instead of in the forest as heretofore. The cutting of *khair* has been restricted by raising the rates on the catechu. After careful consideration of individual cases some restrictions have been placed on the breaking up of forest land for cultivation, and dhya cultivation has only been permitted in special cases. Colonel Thomson comments in his report on abuses of the commutation system detected by him, and with the view of removing the defects in existing arrangements a revised scheme, which will doubtless come before the Chief Commissioner through the regular channel, is being drawn up. After a very careful examination of nearly the whole of the forests, Colonel Thomson proposes that certain areas in different parts of the district should be permanently set aside as reserves. This would, of course, be a step in the right direction, but it is necessary that the selection should be most carefully made. It is by no means essential that such reserves should at once come under the direct management of the officers of the Forest Department. If closed against all cutting of those valuable products in which the forests are deficient, they will improve in condition, and hereafter be better fitted for systematic treatment than they are at present. If after the setting aside of these reserves the remaining area be divided into blocks and worked in rotation as proposed by Colonel Thomson, the management of the Damoh forest will, from a forester's point of view, be on a very satisfactory footing.

The attempts to suppress forest fires, though not completely successful, have resulted in fires being much less common; and some blocks near the station of Damoh round which fire-lines were cleared, escaped fire altogether up to the close of the year.

For the cultivation of lac four blocks of forest have been leased for a term of years.

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The revenue of the Damoh unreserved forests has for many years continued steadily to rise, till in the year under report it amounted to nearly Rs. 28,000. The rise is only to be attributed to improved management and the checking of the un-paid for use of the forests. That there is a still further field for the gradual development of the revenue, appears evident from the District officer's report, copy of which will have reached the Chief Commissioner direct.

Seoni.

50. No change has taken place in the system of management. Of the six blocks being worked in rotation south of the Satpuras, Paraspani or Pulpula was open for the removal of produce under licenses. Of the four blocks south-west of Seoni being similarly managed, Lamajooti was worked during the year. In the east of the district the Ulut Bhyri, Gidkoha, Pailee and Gana Moh forests have been closed entirely, and the remaining area was open to commutation.

Iron smelters have been required to pay for the charcoal they consume, at rates corresponding more closely than those previously in force with the value of the wood they use; the cutting of kair has been checked by raising the rates on kata. The only other change in rates has been in the price of bamboos, for which traders have been required to pay somewhat higher than before.

No long leases for the cultivation of lac have been given; but negotiations for the lease of the Durassi forests for a term of years are in progress. Cultivation of lac has been carried on in four different localities by the District officer, apparently with great success.

The examination and correction of boundaries in Seoni and Lakhnadon has been pushed on, encroachments to the extent of 2,039 acres were detected, and malguzars of the adjoining estates have been required to erect pucka landmarks along the correct boundary.

From 1865-66 the revenue of this district rose gradually till 1870-71, when, with the introduction of the system of commutation defined in paragraph 81 of the report for 1871-72, an enormous increase took place. This year, however, closed with a heavy outstanding, which was recovered in 1871-72, and made the receipts in that year considerably in excess of the actual revenue of the year. (vide paragraph 82 of the Forest Report for 1871-72.)

The changes defined in paragraph 81 of the report already quoted, caused a considerable decrease in the revenue. The year closed with an outstanding of Rs. 6,928, which helped to keep up the receipts in 1872-73, the actual revenue of that year being only Rs. 39,965; the latter year closed with an outstanding of Rs. 2,684, which was included in the receipts for 1873-74. In 1873-74 some important changes took place, viz. the transfer of the Katangi Tahsil to Balaghat, the introduction of license system in lieu of commutation in portion of the forests, and the closing of the Ulutbhiri forest. The amount of the loss to the Seoni revenue resulting from the first of these changes has nowhere been quoted, but is said in the District officer's report for 1873-74 to have been considerable.

The effect of these changes was more plainly seen in the succeeding year, when the receipts fell to a little short of Rs. 33,000. The figures for the past two years show a slight increase.

Mandla.

51. In Mandla the revenue from exports is collected under the Kham Tahsil system, while produce for local consumption is commuted for. Some improvements have been made in the arrangements for checking the exports and collecting the dues thereon. As

compared with the quantity of produce taken out of the district the receipts appear small, and I am inclined to think that a rise in the rates would not diminish the demand and would therefore increase the revenue. The exports go chiefly to meet the demands of the station and city of Jubbulpore, and partly to supply the wants of the well-to do people residing between the Gour and Nerbudda rivers. The large increase in the receipts in 1872-73 is attributable to the levying of grazing dues on "Tandas" passing through the forests; in the following year these dues were abolished except for halts of over three days, and there was consequently a considerable diminution in the receipts. The decrease in 1875-76 is due to some of the people who previously paid grazing dues having claimed exemption from payment, on the grounds that they did not require the use of Government forests; and partly to the whole of the proceeds from the Hurra lease having been credited in the previous year.

Betul

52. In this district the Nimar system is in force, while duty on produce not covered by a pass or license is collected at nakas by an establishment maintained for the purpose.

The District Officer comments on the disadvantage which exists under the present system of cash passing through the hands of the establishments maintained to check the produce removed, but on this subject a special report has been submitted by him to the Commissioner. Efforts have been directed to check the extension of dhya cultivation, which appears of late years to have been on the increase.

Up to June 1872 the leasing system was in force, and no special explanations can be given regarding the fluctuations up to that time, which of course varied according to the degree of competition at the sales. In 1872-73 the system now in force was introduced, and arrangements were made for collecting dues on exports to Berar and Hoshangabad at out-posts at the different frontier bazars and outlets. This brought about a considerable increase of revenue, which continued till the transfer of the Bordah illaka to Hoshangabad in 1874-75 caused a slight decrease.

The District Officer now, however, reports that at the posts on the Berar frontier, duty was taken on all produce not covered by a pass, irrespective of whether it came from Government or private forests. This has been rectified, and in the year under report the receipts returned by this district have consequently been much less. The revenue for 1875-76 was also reduced by the transfer to land revenue of the proceeds from dhya and other cultivation.

Chhindwara

53. In 1874 75 the leasing system, which had up to that time been in force, was partly abolished, and in 1875-76 it gave place entirely to direct management. In consequence of the change the receipts rose to Rs. 21,622 in 1874-75, and Rs. 29,068 in 1875-76. It appears, however, from the district report that of the receipts for the year under report upwards of Rs. 3,000 were on account of the preceding year. The Deputy Commissioner adverts to the attraction of purchasers by reduced rates, but this may be carried too far, for where there is no other means of checking the consumption, and the capabilities of the forests are limited, as they certainly are about the Chhindwara ghats, excessively low rates must tend to clear out the forests rapidly.

Hoshangabad

54. The system in force in Hoshangabad differs from the Nimar system, in as much as the licenses fix the quantities of produce that may be removed under them. This is what has to be aimed at, but under the existing system of annual licenses it is attended with inconvenience to the people, and is I think more open to abuse than any

license system that has yet been introduced, having the disadvantages of both the license and Kham Tahsil system. The Deputy Commissioner now purposes introducing the system of giving separate licenses for each load of produce, the different classes of produce being grouped together according to their value, to be indicated by the colour, and the description of load by the size of the license; the licenses to have a money value attached to them when made over to the license vendors, and license vendors to be held liable for the value of as many as are not forthcoming when account is taken of them.

Major Ricketts also proposes that produce should be cut for sale at depots. That this too would be a step in the right direction is a fact beyond all doubt, but at the present time, and with the agency at present available, it would not, in my opinion, be practicable.

Demarcation between Government forests and private lands has been pushed on, and several boundary disputes of long standing have been settled.

Lac cultivation has been continued in the Malni forest, and the crop of the last cold season is reported to have brought in a small return. Special reports on the subject appear to have been submitted through some other channel.

Up to 1872-73 the unreserved forest revenue was obtained by leasing the right to levy dues on the produce taken from the forests, and the fluctuations up to that time were due to the degree of competition for the leases. In 1873-74 the Bordah illaka was transferred from Betul to Hoshangabad, the long lease of the Malni illaka was resumed, and the license system was introduced. The revenue accordingly rose to nearly Rs. 39,000 in 1873 74, and to Rs. 42,000 in the succeeding year; of the latter amount, however, a small sum resulted from Nimar cattle being sent to the Hoshangabad forests to escape the disease prevalent at the time in Nimar. The latter fact partly accounts for the decrease in the year 1875-76 under the head of grazing dues, but this decrease is mainly attributed by the District Officers to grazing being obtained on easier terms in private forests. In the reserved forests, however, it has not been found that any rates as yet introduced have any appreciable effect on the number of cattle that graze in these forests, and I am inclined to think that the decrease is due to some other cause.

Narsinghpur

55. The Nimar system has remained in force, but greater discretion has been exercised in the issue of family licenses, as it was found that people holding these licenses were in the habit of taking produce under them for sale. Eighteen blocks of forest with an area of 47,480 acres have been leased for three years for the production of lac, at a total rent of Rs. 225 or Rs. 75 per annum.

Up to 1871-72 the right to collect dues on forest produce was leased. The Nimar system was introduced, and the revenue has since steadily risen. The comparatively large increase in the past year is attributed to precautionary measures to prevent abuse of the privileges granted by family licenses.

Nimar

56. There has been no change in the system under which the revenue is collected. The measures adopted for the conservation of the forests are as follows :—

The area under protection against cutting was extended to 480 square miles, of which 400 are in the Burhanpur Tahsil, running for 10 miles on either side of the railway at Chandni. The other block of 80 square miles is on the railway at Bir. These tracts had been previously drawn on extremely for fuel for export. With the view to preserving the productiveness of bamboo stocks, efforts

have been made to check the cutting of produce that is not mature ; while to prevent the destruction of forests by lopping branches and cutting down trees for cattle fodder, the carrying of cutting implements by herdsmen when in the forests, has been prohibited.

In Chandgarh the rates on forest produce have been made to correspond more closely with those current in the adjoining reserve of Punassa, which has tended to increase materially the revenue from these forests.

Pursuing the plan adopted by the Forest officer in the Western Division, Colonel Playfair has commenced the copsing of badly grown teak in Piplode ; 35,000 trees were coppiced and gave an out-turn of 16,600 marketable poles realising Rs. 3,170, the outlay being Rs. 700. These operations will require most careful supervision, as may be seen on reference to the remarks on similar operations in the Western Division.

In consequence of the 480 square miles already referred to being closed against cutting, there has been a decrease in the quantity of fuel taken from the Government forests for export. The demand does not appear to have diminished, but merely to have been thrown on private forests.

I am led to believe that some stringent measures will ere long be necessary to prevent the destruction of forests in the vicinity of the Holkar State Railway, where I understand the heavy demand is leading to the forests being severely cut into. The Assistant Conservator in charge of Punassa will be requested to examine and report on these tracts as soon as possible after the rains.

The fluctuations in the receipts may be explained as follows :—

Prior to 1869-70 the leasing system was in force, and the degree of competition at the sales is the only explanation that can be tendered regarding the fluctuations up to that time. In 1869-70 the system now in force was introduced, and the receipts rose till in 1871-72 they amounted to Rs. 47,500. In the succeeding year (Singast) there was a decrease, owing, it is reported, to marriages, and the erection of new buildings in that year being prohibited among Hindus by their religion ; to the substitution of family licenses for individual licenses, and to the abuse of those licenses by the holders. In 1873-74 the abuse of license was still prevalent, and the revenue continued to fall. Stringent measures were adopted to check the abuse of privileges by license-holders, and in the succeeding year, the receipts rose to Rs. 47,500,—the highest figure previously attained. The slight decrease in the year under report is attributable to loss of grazing dues, owing to the (Singaji mela) being stopped in consequence of the out-break of cholera, and to the extent of the area closed against cutting Other causes have been assigned, but they appear to be all counterbalanced.

Raipur.

57. Until 1868-69 the right to collect dues was leased ; 1869-70 was a year of scarcity, and the people were allowed to collect edible products free of charge ; as a natural consequence the lessees objected to paying up the full amount due on these leases, and hence the fall of revenue in that year. In 1869-70 commutation was introduced, cultivators paying at the rate of one anna for every rupee of land revenue paid by them. The revenue was thus increased by about Rs. 30,000. In the succeeding year the offer for articles of trade, which in the previous year had been based on the total exports of the district, was much lower than in 1869-70, which accounts fully for the decrease. Up to this time the commutation rates were paid for the whole year in advance ; the further decrease in 1871-72 was attributed to a new arrangement under which payment was made in instalments, but were this really the case, there should have been a considerable increase in

1872-73, but the rise in the receipts in that year was a mere trifle. In 1873-74 the system of fixing the commutation fees on the land revenue was abolished, and all cultivators were required to pay at the same rate, and the revenue again fell slightly. But seeing that it has since risen steadily, the fall can only be attributed to the change not being properly understood by the people.

Bilaspur.

58. In Bilaspur the revenue is collected on the license system, since the introduction of which it appears to have made fair progress. The Sonakhan forests have remained closed against the cutting of all produce except bamboos. From the district report of the past year, the arrangement of giving plots of land rent-free to squatters, in consideration of protective service to be rendered, appears to be one of questionable expediency, for the District officer has strong grounds to believe that if they do not themselves defraud Government they connive at other people doing so.

The comparatively large revenue derived in 1871-72 resulted from the recovery of outstandings on account of the previous year. The larger revenue derived in 1873-74 is accounted for in the same manner. The subsequent rise in the receipts appears to be due to the introduction of the license system

SECOND PART.—GENERAL.

HEAD I.

Financial Results.

Receipts and expenditure.

59. The receipts and expenditure are recorded in detail in Form 21. The totals exhibited by this form are as follows :—

Receipts	... ..	Rs. 7,25,335
Expenditure	.. ...	„ 3,70,763
thus giving a surplus of		Rs. 3,54,572

or Rs. 12,969 less than in the previous year, which will be accounted for further on. For the reserved and unreserved forests separately the figures stand thus—

Reserved Forests.

Receipts	... ...	Rs. 2,59 661
Expenditure	... ...	„ 2,84,964
	Deficit	Rs. 25,303

Unreserved Forests.

Receipts	.. ...	Rs. 4,65,674
Expenditure	... ...	„ 85,799
	Surplus	Rs. 3,79,875

It will thus be seen that the deficit on account of reserved forests was Rs. 10,667 more, and the surplus on account of unreserved forests Rs. 2,301 less than in the previous year. The latter difference is trifling and calls for no remark, beyond that heavier charges have been necessary to ensure the realisation of the revenue, while the effect of the increased expenditure has not, it is believed, been fully realised during the year. As regards the greater deficit against the reserves, it is to be noted that the sum of Rs. 20,000, being part purchase money of the Ahiri forest, was paid during the year, and that the attendance of officers at the Forest conference cost nearly Rs. 3,000, and that neither of these items are, strictly speaking, debitable against the transactions of the year. If these

items be left out of account the deficit would be Rs. 2,300, or Rs. 12,300 less than in the previous year. The receipts were also diminished by strikes among labourers in Nimar,—a temporary difficulty which will soon be overcome ; while there was increased expenditure owing to the extension of the area under protection from fire, from which an immediate return is not derived.

Cash transactions.

60. The cash transactions of the department are exhibited in Form 22, which has been duly verified by the Accountant General. Between the Forest and Civil accounts there are no discrepancies.

Outstandings.

61. Form 23 gives the advances and recoveries on account of work. The figures represent almost entirely transactions with subordinates, very little work being done by contractors. The outstandings on account of sales are shown in Form 23A. Almost the whole balance is made up of the unadjusted items on account of timber supplied to the Public Works Department, and will shortly be realised. The deductions at the foot of this Form are to supply the figures required for Form 28.

Receipts and issue of timber and other stock.

62. Form 24 shows in detail the timber brought on stock during the year, and calls for no explanation. Prescribed Form 25 exhibits by pieces the receipts and issues of timber, small wood, and bamboos ; while Form 25A. shows in addition the value of the timber and the value of all receipts, issues and balances. The quantities exhibited under the head of receipts are supported by Form 24, while the issues and their value are supported by Form 26. To obtain the requisite figures for Form 28, the result of Form 25B. has been brought forward at the foot. Form 25B. exhibits the receipts, issues and balances of other stock and their value. In this form a percentage as therein indicated has been allowed for deterioration of the closing balance.

Timber sales.

63. Form 26 exhibits the sales and their value. The cash realisations exhibited by this Form fall short of the receipts shown under Head I. 1*a*. in Form 21, for the following reason:—When the coppicing of teak was commenced, it was intended to collect the whole of the produce at depot, but owing to the demand being in excess of the supply that could thus be made available, the removal by purchasers was permitted, but the charges against the wood having been debited to AI. 1*a*., the receipts were credited to the corresponding Head I. 1*a*.

Expenditure on timber brought on stock and transported.

64. In these Provinces all timber is, as a rule, brought on stock at a depot in or near the forest from which it is subsequently transported, either in a rough or converted state. In Form No. 27 the cost of collection and bringing on stock as well as the cost of conversion are given, while in Form 27A. the cost of transport to depots at which the produce is sold is exhibited, but owing to the circumstance already noted, it is difficult in a form of this kind to give a correct idea of the cost of timber work, the figures moreover are only approximately correct, for no rule can be laid down for calculating the proportion of salaries with which the works should be debited.

Net results of the year's transactions.

65. Form 28 exhibits the net result of the year's transactions as Rs. 3,52,725. The details of the item recovered on account of former years have been abstracted from the detailed accounts of outstandings, in like manner the outstandings on account of the year have been obtained ; they are supported by Form 23A. The disbursements on account of previous years were obtained from the contractor and disburser's ledger. The year closed without liabilities on account of its trans-

actions. The difference in the value of stock is supported by Forms 25A. and 25B. According to this form, the net result of the year's transactions is Rs. 3,52,725, against Rs. 3,83,301 in the previous year. The net result has of course been influenced by the same circumstance as the cash receipts and expenture, but the result has been rendered less favourable by the decrease in the value of stock. A number of sleepers have been sold off from the Goarighat depot at a low price. The urgent demand for sleepers which shortly afterwards sprang up at Jubbulpore was not then foreseen, or the full stock value would have been realised. The financial result of the year's transactions is nevertheless fairly satisfactory, while the demand for produce which the department is able to supply, points to larger profits in the future.

General Remarks.

General results.

66. Taking all things into consideration, it must I think be conceded that the administration of the year has been fairly satisfactory. The net receipts were not so large as in the previous year, but financially the position of the department was better at the close, than at the commencement of the year,—a quantity of costly and uncertain stock not ordinarily in demand having been disposed of. In the reserves more has been done for the conservation of the forests, and in some localities works of improvement have been pushed on. The latter operations are as yet limited in their extent, for to secure success, it is necessary that they should expand slowly. Much has also been done towards reducing the cost at which the produce of the more distant and productive forests can be brought to market. In the unreserved forests there have been many improvements, in the system of collecting the revenue and in the arrangements for the watch and guard of the forests, while efforts have been directed to checking the abuse of privileges under the existing systems. Nor has the conservation of these forests been altogether neglected. Numerous blocks have been closed with the view of allowing them rest, efforts have been made to check wasteful practices, and where necessary to relieve the forests of the more destructive demands by raising the rates charged. The extension of the area of the reserves has also been kept in view, and fair progress has been made in examining the available forest tracts for this purpose.

Perhaps the most propitious circumstance to be recorded, is the increasing interest taken by Civil officers in forest matters, by which the year under report has been marked.

Audit and check of accounts.

67. During the past year the audit of the forest accounts has remained with the Conservator. The object of this arrangement was to give to the Conservator the opportunity of checking and controlling the expenditure in detail—a task that could not efficiently be performed except by an officer familiar with the details of forest work, and which could not be done by the Conservator as long as the detailed accounts did not pass through his office.

68. The means by which this end has been attained, however, has thrown on the Conservator an undue amount of responsibility, and a modified arrangement by which the Conservator will be relieved of the final audit, is, I believe, under the consideration of Government. So far as the object aimed at is concerned, the arrangement has proved satisfactory, and it has been marked by the disappearance of discrepancies between Civil and Forest accounts so common in former years, but this is in a great measure due to the facilities afforded by the Accountant General for detecting and removing discrepancies as they occur.

Instruction of subordinates.

69. The systematic training and instruction of the subordinate establishment is the most important point now demanding attention. It must be admitted that in this respect the progress made has been but slight ; nor could it well be otherwise, considering the limited strength of that establishment which necessitated for protective purposes alone, each individual member being separately employed at posts distant from each other, and from the head-quarters of the divisions. The officers of the department have, I believe, endeavoured to make the most of their opportunities of imparting instruction to the men under them, but under the circumstances already mentioned, much could not be expected from these efforts. Now that an increase of establishment has been sanctioned, it is intended before posting new men to ranges or beats, to attach them for at least twelve months to a small charge where various forest works are in progress, and where they will be kept under the direct control and instruction of an experienced Forest officer. In this way much good will be done, but it must not be supposed that this arrangement will meet the requirements of the department for any length of time. What is really required is a training school, from which the subordinate establishment of all grades may be recruited, and I hope that ere many years have passed we may be in a position to recommend the establishment of such a school on a small scale in connection with one of the smaller charges in these Provinces.

70. The two apprentices attached to these Provinces have been under the instruction of Mr. Fernandez, Assistant Conservator, and have made fair progress. Chunder Kumar's term of probation has been extended by one year.

71. The officers of the department have as a body worked well. Of the Deputy Conservators, I would mention Mr. Thompson and Captain Losack ; the former has continued to be most successful in his management of the important and difficult charge of the Southern Division, while the latter has been unceasing in his efforts to secure the economical management and working of his charge. Of the Assistants, Messrs. McKee, Fernandez, Smythies have fully maintained their high character as efficient and zealous Forest Officers. Mr. Thomas has also earned my approbation by his successful management of the Ahiri subdivision.

I have the honor to be,

Sir,

Your most obedient Servant,

J. C. DOVETON,

Conservator of Forests,

Central Provinces.

31 7 76 Q 43 570

STATEMENTS.

No.

FOREST DEPARTMENT,

Annual Summary of Revenue and Expenditure in the

Classification.	Direction.			Northern Division.			Jubbulpore Division.		
RECEIPTS.	Rs.	a.	p.	Rs	a	p.	Rs.	a.	p.
I.—Revenue from wood :—									
1. Brought to depot by departmental agency	...	...	...	...	...	...	...	...	...
(a) Timber	...	...	...	42,837	14	6	...	...	...
(b.) Firewood and charcoal	...	...	...	...	...	...	...	...	...
(c.) Sandal wood	...	...	...	...	...	...	...	...	...
2. Wood removed from the forests by purchasers, license holders and permit holders	...	...	...	...	...	...	...	...	...
(a.) Timber	...	...	...	...	...	...	...	...	...
(b.) Firewood and charcoal	...	...	...	...	...	...	...	...	...
3. From confiscated drift and waif wood	...	...	...	...	...	...	...	...	...
II.—Revenue from minor produce :—									
1. Grazing dues and sale of grass	...	...	...	28	8	3	...	...	...
2. Other minor produce	...	...	...	31	4	4	...	...	...
III.—Duty on produce of Foreign or private forests imported into British territory :—									
1. On wood	...	...	...	...	...	...	...	...	...
2. On other forest produce	...	...	...	...	...	...	...	...	...
IV.—Miscellaneous :—									
1. From fines and forfeitures	...	...	...	...	...	...	...	...	...
2. From refunds to the department	...	...	...	...	...	...	...	...	...
3. From other sources	...	1,659	6	3	164	10	11	...	...
Total Receipts	...	1,659	6	3	43,062	5	6	...	...
EXPENDITURE									
A.—Conservancy and Working.									
I.—Cost of timber operations :—									
1. On wood brought to depot by departmental agency	...	...	...	...	...	...	...	...	...
(a.) Timber	...	...	...	27,789	4	6	...	...	...
(b.) Firewood and charcoal	...	...	...	...	...	...	...	...	...
(c.) Sandal wood	...	...	...	...	...	...	...	...	...
2. On wood removed from the forest by purchasers, license holders and permit holders	...	...	...	...	...	...	...	...	...
(a.) Timber	...	...	...	...	...	...	...	...	...
(b.) Firewood and charcoal	...	...	...	...	...	...	...	...	...
3. On confiscated, drift and waif wood	...	...	...	...	...	...	...	...	...
II.—Cost of collecting minor produce :—									
1. Grazing and sale of grass	...	...	...	...	...	...	...	...	...
2. Other forest produce	...	...	...	12	2	4	...	...	...

CENTRAL PROVINCES.

different Divisions during the year 1875-76.

Western Division.			Southern Division.			Eastern Division.			Central Division.			Saugor Division.			Total			District Forests.			Grand Total.		
Rs.	a.	p.	Rs.	a.	p	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
..	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	..	...	...	...
17,652	2	2	1,39,125	11	4	766	14	5	2,924	11	4	1,315	10	6	2,04,622	15	9	18,747	5	10	2,23,370	5	7
...	..	...	...	.	...	...	..	...	...	...	...	...	...	..	...	..	...	1,293	7	5	1,298	7	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	...	..	...	...	...	...
1,602	9	10	8,225	6	5	47	9	8	3,808	15	6	47	0	9	13,731	10	2	61,070	5	11	74,802	0	1
2,190	4	0	107	0	0	...	...	...	519	9	8	303	11	7	3,120	9	3	74,851	6	3	77,971	15	6
106	1	9	...	...	...	1	0	0	...	...	..	...	...	..	107	1	9	3,158	14	11	3,266	0	8
9,583	2	5	1,282	9	0	2	12	0	5,874	11	6	1,793	15	10	18,565	11	0	1,59,833	6	11	1,78,399	1	11
2,871	13	3	2,187	4	6	...	...	...	1,003	14	5	184	15	9	6,279	4	3	76,255	10	7	82,534	14	10
...	...	...	...	...	...	...	...	...	...	...	..	...	..		...	...	...	...	..	...	...	...	...
...	...	...	...	...	...	...	...	...	..	...	...	...	...	..	...	...	...	...	...	..	...	...	...
51	6	5	..	...	...	...	...	...	11	10	6	5	8	0	68	8	11	1,054	6	6	1,122	15	5
...	...	...	...	...	...	...	...	...	..	...	.	...	...	.	...	...	...	61	8	5	61	8	5
8,330	2	9	1,851	8	0	6	10	8	486	4	3	666	4	2	13,164	15	0	69,347	14	2	82,512	13	2
42,387	10	7	1,52,779	7	3	824	14	9	14,629	13	2	4,317	2	7	2,59,660	12	1	4,65,674	6	11	7,25,335	3	0
...	...	...	...	..	...	...	..	...	...	...	...	...	.	...	...	...	...	...	...	...	..	..	..
3,413	15	5	65,815	11	6	...	..	...	1,499	2	1	254	14	4	98,772	15	10	1,037	4	3	99,810	4	1
...	...	...	...	...	...	..	...	...	6	12	0	...	...	...	6	12	0	..	..	...	6	12	0
...	...	...	...	..	...	...	..	...	...	...	...	...	...	.	...	.	...	...	.	...	...	...	...
...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	...	..	...	...	.	...
853	2	0	185	2	1	..	...	..	408	1	3	328	7	3	1,774	12	7	17,838	3	9	19,613	0	4
853	2	2	185	2	1	...	..	...	408	1	3	328	7	3	1,774	12	9	17,838	4	0	19,613	0	9
...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	...	..	...	...	...	..	...	..	...
853	2	8	769	3	4	...	...	...	408	1	3	329	3	8	2,359	10	6	17,937	0	7	20,296	11	1
1,397	12	11	1,205	4	2	168	11	3	479	7	5	357	3	6	3,615	9	7	18,125	10	7	21,741	4	2

Classification.	Direction.			Northern Division.			Jubbulpore Division.		
	Rs	a.	p.	Rs.	a.	p.	Rs.	a.	p.
EXPENDITURE.—(*Continued.*)									
A.—Conservancy and Working.—(*Continued*)									
III.—Cost of forest organization :—									
1. Demarcation lines and boundary pillars or marks	...	...	...	294	1	0	...	...	...
2. Working plans	...	..	...	97	8	3	..	...	...
3. Surveys	...	...	...	529	5	0	...	..	...
IV.—Cost of the treatment and creation of forests .—									
1. Natural forests	...	...	...	...	...	...	...	...	...
(*a.*) Protection from fire	...	...	...	1,889	5	11	...	...	...
(*b.*) Fencing and enclosing	...	...	...	...	...	...	...	...	...
(*c.*) Improvements and conservation	...	...	...	2,325	14	7	...	...	...
(*d.*) "Reboisement" or restoration of denuded areas	...	...	...	..	...	...	...	...	...
2. Artificial forests	...	...	..	...	...	...	...	...	...
(*a.*) Formation	...	...	...	...	...	...	...	...	...
(*b.*) Protection from fire	...	..	...	...	...	...	...	...	...
(*c.*) Improvements and conservation	...	63	6	6	...	...	...	...	...
(*d.*) Fencing and enclosing	...	...	...	...	...	...	...	...	...
V.—Rent of leased forests :—									
VI.—Cost of collecting duty on produce of foreign or private forests imported into British territory	...	...	...	...	..	...	...	..	...
VII.—Works of utility for the development of forests :—									
1. Roads and bridges	...	...	...	955	2	8	...	...	...
2. Buildings and Offices	...	...	...	632	15	3	...	...	...
3. Compensation for land taken up for forest purposes, or for extinction of forests rights	...	...	...	...	...	..	...	...	...
4. Other works	..	...	...	...	...	..	.	...	...
VIII.—Cost of departmental cattle :—									
1. Purchase of stock	...	...	...	4	0	0	...	...	...
2. Hire of stock	...	..	...	...	...	...	...	...	...
3. Feed and keep of cattle	...	228	10	8	3,071	3	8	...	...	...
IX.—Cost of departmental plant and tools .—									
1. For timber and wood operations	...	...	...	45	0	0	...	...	...
2. For other purposes	...	...	...	94	0	0	...	...	...
X.—Miscellaneous charges . —									
1. Refunds	...	...	..	...	...	...	...	...	..
2. Law charges	...	...	...	...	...	...	...	...	...
3. Other charges	...	2,109	15	6	212	0	0	...	...	...
Total Conservancy and Working	...	2,409	0	8	37,951	15	2	...	...	...
B.—Establishments.									
I.—Salaries	...	20,246	10	8	18,052	6	0	...	...	...
II.—Travelling allowances	...	2,743	6	1	4,629	8	5	...	...	..
III.—Contingencies	...	864	11	1	1,728	10	3	...	...	...
Total Establishments	...	23,854	11	10	24,410	8	8	...	...	...
Grand Total Expenditure	...	26,256	12	6	62,362	7	10	...	...	...

(*Continued.*)

Western Division.			Southern Division.			Eastern Division.			Central Division.			Saugor Division.			Total.			District Forests.			Grand Total.		
Rs.	a.	p	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
16	12	0	80	8	0	...	...	...	4	10	0	131	10	3	527	9	3	911	11	3	1,439	4	6
...	...	...	...	...	...	...	...	...	...	...	...	2	7	0	99	15	3	...	...	...	99	15	3
...	...	...	503	15	8	...	...	...	...	...	...	5	4	6	1,038	9	2	...	...	...	1,038	9	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,017	15	7	4,390	15	4	139	6	0	1,175	14	6	123	6	3	9,736	15	7	...	...	...	9,736	15	7
...	...	...	...	...	...	...	...	...	2	2	6	...	...	...	2	2	6	...	...	...	2	2	6
87	0	11	403	10	4	281	2	5	991	13	5	103	11	7	4,193	5	3	228	11	7	4,422	0	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	25	12	4	25	12	4	...	...	...	25	12	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	47	11	6	20	5	2	131	7	2	...	...	...	131	7	2
...	...	...	...	...	...	...	...	...	17	6	6	3	7	0	20	13	6	...	...	...	20	13	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	3	3	0	...	...	...	958	5	8	...	...	...	958	5	8
401	2	9	762	4	10	...	...	...	402	1	0	115	0	6	2,313	8	4	...	...	...	2,313	8	4
...	...	...	20,000	0	0	...	...	...	...	...	...	...	...	...	20,000	0	0	...	...	...	20,000	0	0
...	...	...	...	...	...	...	...	...	21	10	0	...	...	...	21	10	0	...	...	...	21	10	0
58	0	0	...	...	...	...	...	...	...	...	...	...	...	...	62	0	0	...	...	...	62	0	0
1	8	0	104	11	0	...	...	...	...	...	...	...	...	...	106	3	0	...	...	...	106	3	0
782	0	9	9,926	4	3	...	...	...	...	...	...	...	...	...	14,008	3	4	...	...	...	14,008	3	4
8	9	0	695	3	6	...	...	...	...	...	...	...	...	...	748	12	6	...	...	...	748	12	6
236	10	0	176	12	0	...	...	...	164	14	6	5	0	0	677	4	6	...	...	...	677	4	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	818	9	9	818	9	9
3	2	6	...	...	...	...	...	...	...	...	...	7	7	0	30	9	6	...	...	...	30	9	6
438	12	0	...	...	...	...	...	...	...	...	...	19	0	3	2,779	11	9	...	...	...	2,779	11	9
11,442	12	8	1,05,204	12	1	584	3	8	6,041	0	2	2,160	11	5	1,65,787	7	10	74,735	7	9	2,40,522	15	7
23,061	4	5	17,540	2	3	861	2	0	11,892	2	5	3,707	11	4	95,361	14	1	11,034	0	0	1,06,395	14	1
3,269	7	3	4,303	7	10	...	...	...	1,835	1	3	787	14	1	17,568	12	11	30	0	0	17,598	12	11
1,591	1	4	820	10	6	*80	14	0	773	5	11	386	8	7	6,245	13	8	...	...	...	6,245	13	8
27,921	13	0	22,664	4	7	942	0	0	14,501	0	7	4,882	2	0	1,19,176	8	8	11,064	0	0	1,30,240	8	8
39,364	9	8	1,27,869	0	8	1,526	3	8	20,542	0	9	7,042	13	5	2,84,964	0	6	85,799	7	9	3,70,763	8	3

No 22.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Annual Abstract Account of cash transaction of the Forest Department, Central Provinces, for the year 1875-76.

Heads of Accounts.	Amount.			Heads of Accounts.	Amount.		
	Rs	a	p		Rs.	a.	p.
To Cash in hand on 1st April 1875 ...	3,736	15	0	By Expenditure of the department ...	3,70,763	8	3
„ Revenue received ..	7,25,335	3	0	„ Do chargeable to Provincial Services on account of Office rent and Printing charges ..	983	1	10
„ Remittances from State Treasuries ...	3,73,099	0	11	„ Remittances to State Treasuries ...	5,55,655	12	2
„ Advances recovered ...	1,90,436	4	11	„ Advances made ..	1,91,435	15	1
„ Deposit received ...	3,947	13	0	„ Deposit repaid ...	2,732	5	2
Government of India.							
„ Amount recovered from Mr. McKee, Assistant Conservator on account of a servant's Railway tickets overdrawn from Durbunga Treasury ...	15	0	0	*Public Works Department.*			
„ Uncovenanted Family Pension Fund ...	1,226	12	0	„ Book transfer on account of Timber supplied to Department Public Works ..	1,71,342	8	1
„ Book transfer on account of Store supplied from Mathematical Instrument Department, Calcutta ...	433	8	0	Cash in hand on 31st March 1876 ...	7,760	2	0
Government of Madras.							
„ Military Fund ...	624	4	7				
Military Department, Bombay							
„ Book transfer on account of medicine supplied ...	426	2	2				
North-Western Provinces							
„ Book transfer on account of measuring tables purchased from Roorki College ...	8	4	0				
Department Public Works							
„ Book transfer on account of carriage of sleepers, &c ...	1,134	15	10				
Provincial Service.							
„ Book transfer on account of repairs to tents by the Superintendent School of Industry, Jubbulpore ...	136	4	0				
„ Book transfer on account of Printing ..	64	9	2				
„ Book transfer on account of Hemp ropes supplied ...	48	4	0				
Total Rupees ...	13,00,673	4	7	Total Rupees ...	13,00,673	4	7

No. 23.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Annual Statement of Outstandings and Liabilities of the Department on account of Contractors and Disbursers for the year 1875-76.

Division.	Department Debtor.									Department Creditor.									Balances due.					
	At commencement of year.			Recoveries in cash, and value of supplies and work done during the year			At close of year.			At commencement of year			Payments made during year			At close of year.			To Department (outstandings).			By Department (liabilities).		
	Rs	a	p.	Rs.	a.	p	Rs	a	p	Rs.	a.	p.	Rs.	a	p	Rs.	a	p.	Rs.	a.	p	Rs.	a	p.
Direction ...	...	...	...	4,892	0	6	4,892	0	6	483	2	2	5,461	1	5	5,944	3	7	1,052	3	1	..	...	...
Northern Division ...	...	...	...	22,005	4	4	22,005	4	4	2,861	11	4	21,261	1	0	24,122	12	4	2,117	8	0	...	...	...
Western Division ...	...	...	...	37,282	6	2	37,282	6	2	4,028	0	0	35,962	10	9	39,990	10	9	2,708	4	7	...	...	...
Southern Division ...	1,184	8	6	1,11,301	4	2	1,12,485	12	8	5,179	9	6	1,13,343	6	7	1,18,523	0	1	6,037	3	5	...	...	...
Eastern Division ...	...	...	...	1,441	3	0	1,441	3	0	585	2	1	1,563	1	4	2,148	3	5	707	0	5	...	...	...
Central Division ...	...	.	...	9,909	2	8	9,909	2	8	590	11	6	10,034	4	3	10,624	15	9	715	13	1	...	...	...
Saugor Division ...	...	...	...	3,098	10	8	3,098	10	8	232	6	3	3,201	15	3	3,434	5	6	335	10	10	. .	...	...
Total ..	1,184	8	6	1,89,929	15	6	1,91,114	8	0	13,960	10	10	1,90,827	8	7	2,04,788	3	5	13,673	11	5	...	...	...
District Forests ..	...	..	...	961	2	9	961	2	9	1,154	14	0	1,101	12	10	2,256	10	10	1,295	8	1	...	...	...
Grand Total ...	1,184	8	6	1,90,891	2	3	1,92,075	10	9	15,115	8	10	1,91,929	5	5	2,07,044	14	3	14,969	3	6	...	...	...

No. 23 A.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Annual Statement of Outstandings on sale accounts for the year 1875-76.

Division.	Outstandings at commencement of the year.			Value of sale during the year.			Total.			Recoveries made during the year.			Written off to profit and loss.			Balance outstanding.			Remarks.
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	
Direction ...	336	9	10	1,422	12	5	1,759	6	3	1,659	6	3	...	...	...	100	0	0	
Northern Division ...	1,854	3	0	46,494	13	6	48,349	0	6	43,062	5	6	...	...	...	5,286	11	0	
Western Division ...	...	...	...	42,387	10	7	42,387	10	7	42,387	10	7	...	...	...	...	...	...	
Southern Division ...	23,505	0	0	1,89,213	5	4	2,12,718	5	4	1,52,779	7	3	...	...	...	59,938	14	1	
Eastern Division ...	...	...	...	824	14	9	824	14	9	824	14	9	...	...	...	...	...	...	
Central Division ...	...	...	...	14,629	13	2	14,629	13	2	14,629	13	2	...	...	...	...	...	...	
Saugor Division. ...	43	9	11	4,275	8	8	4,319	2	7	4,317	2	7	...	...	...	2	0	0	
Total ...	25,739	6	9	2,99,248	14	5	3,24,988	5	2	2,59,660	12	1	...	...	...	65,327	9	1	
Deduct amount recovered on account of previous years ...	23,783	3	9	Deduct balance outstanding on account of former years ...												1,956	3	0	
Balance outstanding on account of previous years ...	1,956	3	0	Balance outsanding on account of the year ...												63,371	6	1	

No. 24.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Statement of Timber brought to Depots from the different Forest Divisions during 1875-76.

Name of River or Division.	Forest.	Description of timber.	Pieces.	Cubic feet.	Totals of each river.	
					Pieces.	Cubic feet.
Northern Division ...	Kisli Depot.	Sal logs ...	431	19,194		
"	Tilri "	Do. ...	2	...		
"	Sackri "	Do. ...	17	493		
"	Goarighat "	Do. ...	9	1,017		
"	Kisli "	Beeja logs ...	10	480		
"	Do.	Saj logs ...	6	282		
"	Goarighat "	Sal sleepers ...	106	11,022		
"	Bisander "	Teak logs ...	153	2,783		
"	Mandla "	Do. ...	17	295		
"	Banjar Valley Forest.	Beeja and dowra sleepers.	612	816		
"	Tilri Depot.	Bamboos ...	36,220	...	37,583	36,382
Western Division ...	Mortaka.	Teak poles ...	896	...		
"	Do.	Bamboos ...	591	...		
"	Hoshangabad.	Do. ...	2,560	...		
		Teak railway keys ..	3,600	...	7,047	...
Southern Division ...	Allapillay.	Teak logs ..	10,518	149,127		
"	Do.	Teak sleepers ...	18,771	58,641		
"	Do.	Teak scantlings ..	2,316	2,738		
"	Do.	Do. for D.P.W.	389	956		
"	Do.	Teak planks ..	2,096	3,955		
"	Do.	Teak piles ...	40	1,279		
"	Do	Squared teak logs ...	76	354		
"	Toolana.	Teak khakers ...	140	...	34,346	217,050
Central Division ...	Khapa.	Teak pieces ...	259	...		
"	Do.	Teak khakers ...	532	...		
"	Korai.	Bamboos ...	19,188	...		
"	Nagpur.	Do. ...	150	...	20,129	...
Saugor Division ...	Garhakota	Teak logs ..	22	238		
"	Do	Teak bullars ...	13	...		
"	Saugor.	Do. ...	426	...		
"	Gurrakotta.	Teak mulgas ...	1	...		
"	Do.	Koha logs ...	7	175		
"	Do.	Teak koorwas ...	6	...	475	413
					99,580	253,845

No. 25.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Annual Timber Accounts for the year 1875-76.

Particulars.	Pieces.	Total
I.—Stock in hand at the following Divisions at the commencement of the year:—		
Northern Division	65,976	
Western "	27,466	
Southern "	36,943	
Eastern "	97	
Central "	28,694	
Saugor "	721	
		159,897
II.—Timber received at Divisions from the Forest during 1875-76 as per Form No. 24.		
Northern Division	37,583	
Western "	7,047	
Southern "	34,346	
Eastern "	...	
Central "	20,129	
Saugor "	475	
		99,580
Total ...	...	259,477

Particulars.	Pieces.	Total.
I.—Timber removed by purchasers from Divisions.		
Northern Division	39,762	
Western "	25,580	
Southern "	31,141	
Eastern "	17	
Central "	26,181	
Saugor "	1,033	
		123,714
II.—Timber lost and converted.		
Northern Division	3,538	
Western "	495	
Southern "	9,337	
Central "	11,215	
Saugor "	...	
		24,585
III.—Stock in hand at the close of the year at the following Divisions:—		
Northern Division	60,259	
Western "	8,438	
Southern "	30,811	
Eastern "	80	
Central "	11,427	
Saugor "	163	
		111,178
Total ...	...	259,477

No 25A.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Abstract of Annual Timber Accounts for the year 1875-76.

Description of timber.	No of pieces.	Cubic feet			Rate per 100 c. ft.	Value.			Total		
Opening balance.						Rs.	a	p	Rs	a	p
Teak logs ..	10,118	113,720	0	0	Rs a p 101 12 8	80,071	9	3			
Sal sleepers ..	11,033	27,545	0	0		55,022	2	0			
Teak sleepers ..	14,304	44,789	0	0		47,810	7	0			
Sal timber ..	975	21,392	0	0		18,735	0	0			
Hardoo sleepers ..	169	219	0	0		232	4	0			
Anjini sleepers ..	19	24	0	0		33	4	0			
Teak logs squared ..	722	8,305	0	0		10,380	13	9			
Dowra sleepers ..	24	31	0	0		30	0	0			
Bijasal sleepers ..	79	102	0	0		98	12	0			
Teak scantlings ...	18,012	21,040	0	0		23,840	14	11			
Teak planks ..	1,755	1,442	0	0		1,578	7	11			
Shisham logs .	11	240	0	0		180	2	0			
Teak sleepers in length	7	60	0	0		119	8	0			
Sal logs	24	311	0	0		166	12	4			
Bija logs ..	32	628	0	0		352	0	0			
Saj logs ..	16	320	0	0		240	0	0			
Sal bullees and golas ..	2,573	..	..	..		2,247	12	0			
Saj khakers ..	1	...		..		0	7	0			
Teak poles ...	9,702	...	..	..		1,940	0	0			
Teak khakers ...	540	...		..		118	2	7			
Dhooras ..	782	...	.	..		288	13	0			
Ascoots ..	222	..	.	..		41	10	0			
Teak stumps ..	202	650	0	0		203	2	0			
Teak bullees ..	256	...	..	.		164	14	0			
Teak mulgas ..	424	...	..	..		121	4	0			
Bamboos ...	87,895	..		.		1,125	15	9			
Total ..	159,897	240,818	0	0					2,45,144	1	0

Description of timber.	No. of pieces	Cubic feet			Rate per 100 c. ft	Value.			Total.		
Sale.						Rs.	a	p	Rs.	a.	p.
Teak logs ...	838	10,65[illegible]	0	0	Rs a p 165 6 7	5,658	3	8			
Sal sleepers ...	8,412	29,43[illegible]	0	0		41,896	8	0			
Teak sleepers ..	28,622	89,41[illegible]	0	0		1,52,233	4	2			
Sal logs ..	126	2,460	0	0		3,96[illegible]	5	1			
Teak scantlings ..	1,147	2,270	0	0		3,794	3	6			
Teak planks .	1,059	2,651	0	0		6,964	5	0			
Beeja logs ..	32	628	0	0		317	8	6			
Saj logs ..	14	280	0	0		203	4	0			
Saj bullees and golas ..	762	...	..	.		574	4	0			
Teak poles ..	10,598	...	..	..		1,082	3	10			
Teak khakers ..	699	..	...	.		518	10	0			
Dhooras ...	455	...	..	.		132	4	3			
Ascoots ...	222	...	.			32	11	8			
Teak bullees ...	541	...	...	.		424	11	0			
Teak mulgas .	425	..	.	.		96	2	4			
Teak Railway keys ..	3,000	..	..	..		87	0	0			
Teak piles ..	4	121	0	0		332	12	0			
Squared teak logs ..	73	340	0	0		935	0	0			
Teak pieces ..	235	...	...	.		8	8	0			
Kohwa logs . ..	7	175	0	0		40	5	3			
Teak kooras ...	6	..	.	...		0	3	0			
Bamboos ..	66,437	...	..	...		2,216	10	7			
Difference in value of wood supplied, to be recovered from Public Works Department...						7,319	12	5			
Total ...	123,714	138,434	0	0					2,28,836	12	3

No. 25A.—(*Continued.*)

Description of timber	No of pieces.	Cubic feet			Rate per 100 c ft.	Value			Total.		
Received during the year.						Rs	a	p	Rs.	a	p
Teak logs ..	10 710	1,52,443	0	0	Rs a p 64 0 0	1,13,712	13	9			
Sal sleepers ..	106	11,022	0	0		530	0	0			
Teak sleepers ..	18,771	58,641	0	0		28,156	8	0			
Sal logs .	459	20,704	0	0		11,107	8	0			
Teak scantlings ..	2 705	3 694	0	0		2,085	14	8			
Teak planks ..	2,096	3,355	0	0		1,977	5	6			
Teak poles ..	896	..	0	0		179	3	2			
Beeja logs .	10	480	0	0		240	0	0			
Saj logs ..	6	282	0	0		141	0	0			
Teak khakers ..	672	...	0	0		506	12	0			
Teak bullees ..	439	...	0	0		441	8	0			
Teak mulgas ..	1	...	0	0		0	2	0			
Teak Railway keys ..	3,000	...	0	0		87	0	0			
Teak piles ..	40	1,279	0	0		1,598	2	0			
Squared teak logs ..	76	354	0	0		443	1	5			
Teak pieces ..	259	...	0	0		8	10	0			
Kohwa logs .	7	175	0	0		49	5	3			
Teak koorwas ..	6	...	0	0		0	3	0			
Beeja and Dowra sleepers ..	612	816	0	0		408	0	0			
Bamboos .	58,709	...	0	0		877	13	0			
Total ..	99,580	2,53,845	0	0					1,69,541	13	9

Description of timber	No. of pieces	Cubic feet			Rate per 100 c ft.	Value.			Total.		
Decrease by re-measurement.					Rs a p 74 15 3	Rs	a	p	Rs.	a.	p.
Sal sleepers ..	...	139	0	0		104	3	0			
Total ..	..	139	0	0					104	3	0
Lost											
Teak logs converted into sleepers &c. ...	8,980	1,06,184	0	0	Rs a p 75 0 6	79,863	2	3			
Sal sleepers condemned	105	19	0	0		...	...	.			
Teak sleepers lost in floods and condemned	279	1,102	0	0		615	12	0			
Sal logs lost in flood .	8	709	0	0		670	2	8			
Unfin sleepers condemned ..	19	24	0	0		33	4	0			
Teak planks lost in flood ..	200	...	...	.		...	...	..			
Teak scantlings ditto.	1	3	0	0		3	2	0			
Teak stumps rejected...	202	650	0	0		203	2	0			
Bullees and golas used departmentally ..	136	...	.			102	0	0			
Dhooras rejected ..	227	..				42	9	0			
Teak kakbers used and rejected ...	204	..	.	.		40	12	10			
Bamboos lost, used and condemned ...	14,224	...		...		198	5	3			
Total ...	24,585	1,08,991	0	0					81,778	4	0
Closing balance.											
Teak logs ..	11,010	1,49,021	0	0	Rs a p 85 2 8	1,08,107	5	8			
Sal sleepers ..	2,622	9,113	0	0		6,495	10	0			
Teak sleepers ..	4,174	12 912	0	0		13,952	1	0			
Sal logs ..	1,324	39,108	0	0		31,016	0	4			
Hardoo sleepers ..	169	219	0	0		232	4	0			
Teak logs squared .	722	8,304	0	0		14,630	2	1			
Dowra sleepers ...	24	31	0	0		30	0	0			
Beejasal sleepers ..	79	102	0	0		98	12	0			
Teak scantlings ..	19,569	22,462	0	0		27,545	13	9			

Increase on re-measurement.	...	9	0	0																				
Total ...	...	9	0	0		9	0	0		9	0	0	Teak planks ...	2,592	2,746	0	0	Rs. a. p. 85 2 8	2,796	11	2			
Increase in the value of stock resulting on transfer from forest to market depot ...	...	...	..	...		...	...	..		1,13,498	10	0	Shisham logs ...	11	240	0	0		180	2	0			
													Teak sleepers length ...	7	60	0	0		119	8	0			
													Beeja logs ...	10	480	0	0		240	0	0			
													Saj logs ...	8	322	0	0		168	14	0			
													Saj bullees and golas ...	1,675	...	...	..		1,570	4	0			
													Saj khakers ...	1	...	..	...		0	7	0			
													Teak khakers ..	309	...	...	...		61	12	9			
													Dhooras ...	100	...	..	..		18	12	0			
													Beeja and Dowra sleepers ...	612	816	0	0		408	0	0			
													Teak piles ...	36	1,158	0	0		1,416	14	0			
													Squared teak logs ...	3	14	0	0		18	1	5			
													Teak pieces ...	24	...	..	..		0	2	0			
													Teak bullees ...	154	...	...	...		134	4	0			
													Bamboos ..	65,943	...	...	...		902	8	10			
													Total .	1,11,178	2,47,108	0	0					2,10,474	6	0
Total ...	2,59,477	4,94,672	0	0		5,21,193	9	3					Grand Total ...	2,59,477	4,94,672	0	0					5,21,193	9	3

	Rs.	a.	p.	
NOTE.—Value of stock at commencement of the year	2,45,144	1	6	
Value of stock at close of the year	2,10,474	6	0	
Difference ...	34,669	11	6	Against the year.
Add difference in value of other stock, *vide* Form No. 25B ..	7,949	8	1	
Net difference in value of all stock	42,619	3	7	Against the year.

No. 25 B.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Abstract showing the value of live and dead stock for the year 1875-76.

	On hand at commencement of the year				Value of receipts during the year				Total				Loss by death and deterioration &c.				Value of balance at close of the year.				Allowance for deterioration
	No	Value.			No	Value.			No	Value.			No	Value			No	Value			
		Rs.	A.	P.		Rs	A	P		Rs.	A.	P		Rs	A	P.		Rs.	A	P.	
Elephants ...	10	14,691	0	0	...	...	..	..	10	14,691	0	0	2	4,089	0	0	8	10,602	0	0	At 10 per cent per annum
Other live stock ...	230	3,035	0	3	4	58	0	0	234	3,093	0	3	35	1,093	6	5	199	1,999	9	10	At 20 per cent per annum
Machinery ...	..	9,894	2	2	...	...	..	.	...	9,894	2	2	...	989	6	7	...	8,904	11	7	At 10 per cent per annum
Other dead stock ..	...	30,275	9	1	...	2,097	5	2	...	32,372	14	3	...	3,933	0	3	...	28,439	14	0	At 10 per cent per annum
Total ..	...	57,895	11	6	...	2,155	5	2	..	60,051	0	8	...	10,104	13	3	...	49,946	3	5	

NOTE.—Value of stock at the commencement of the year ... Rs 57,895 11 6
Value of stock at the close of the year ... „ 49,946 3 5

Difference Rs. 7,949 8 1 Against the year.

No. 26.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Statement showing the amount realized on account of different classes of timber sold during the year 1875-76.

Division.		Number of logs &c., sold	Cubical contents			Amount realized on account of timber &c., sold			Average amount per 100 cubic feet		
						Rs.	A	P.	Rs	A	P
Northern Division	Sal logs	126	2,460	0	0	3,968	5	1	161	5	0
	Sal sleepers	8,410	29,135	0	0	41,892	8	0	142	5	1
	Bamboos	31,226	...	...	...	409	8	11	...	...	...
Western Division	Teak logs	673	7,341	0	0	784	15	0	5	5	10
	Teak poles	10 598	...	...	...	1,082	3	10	...	...	...
	Teak Railway keys	3,000	...	...	...	87	0	0	...	...	...
	Bamboos	11,309	...		...	464	12	9	...	...	...
Southern Division	Teak logs	96	2,132	0	0	3,775	8	4	177	0	11
	Teak sleepers	28,622	89,415	0	0	1,52,233	4	2	170	4	0
	Teak scantlings	1,147	2,270	0	0	3,794	3	6	167	3	9
	Teak planks	1,059	2,651	0	0	6,964	5	0	262	10	0
	Teak piles	4	121	0	0	332	12	0	275	0	0
	Squared teak logs	73	340	0	0	935	0	0	275	0	0
	Teak khakers	140	...	...	...	204	12	0	...	...	...
	Difference in value of wood supplied to be recovered from Public Works Department					7,319	12	5			
Eastern Division	Teak logs	17	438	0	0	766	14	5	175	1	5
Central Division	Beeja logs	32	628	0	0	317	8	6	50	8	11
	Saj Bullees and Golas	762	...	...	...	574	4	0	...		...
	Teak khakers	559	...		...	313	14	0	...	...	...
	Dhooras	455	...	...	...	132	4	3	...	...	...
	Ascoots	222	...	...	...	32	11	8	...	...	...
	Saj logs	14	280	0	0	203	4	0	72	9	4
	Teak peices	235	...	...	...	8	8	0	...	...	...
	Bamboos	23,902	...	...	...	1,342	4	11	...	...	...

Remarks.	
Timber sold in previous years remaining unremoved at commencement of the year ...	5,08,791
Timber sold during the year ...	5,08,791
Total ...	...
Timber remaining unremoved from depot by purchasers during the year	5,08,791
Balance removed from depots by purchasers during the year ...	

No. 26.—*Continued.*

Divisions.		Number of logs &c., sold.	Cubical contents.			Amount realized on account of Timber &c. sold.			Average amount per 100 cubic feet.			Remarks.
			Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Saugor Division ...	Teak logs ...	52	748	0	0	730	13	11	79	11	4	
	Khowa logs ...	7	175	0	0	40	5	3	23	0	8	
	Sal sleepers ...	2	...	...	...	4	0	0	...	...	...	
	Teak koorwas ...	6	...	...	...	0	3	0	...	...	...	
	Teak bullees ...	541	....	...	...	424	11	0	...	...	...	
	Teak mulgas ...	425	...	...	...	96	2	4	...	...	...	
		1,23,714	1,38,434	0	0	2,28,836	12	3				
		Deducted amount due but not realized during the year ..				63,371	6	1				
		Balance ...				1,65,465	6	2				
		Add amount realized on account of former years.				23,524	7	0				
		Add amount collected by District Officers ...				18,747	5	10				
		Total ...				2,07,737	3	0				

No. 27.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Statement showing the amount expended on account of Timber brought on stock in the different Forest Divisions during 1875-76.

Name of Divisions.	Description of logs.	No. of logs.	Cubical contents.			Timber expenses.			Cost of establishment.			Total amount expended.			Average amount per 100 cubic feet.			Remarks.
						Rs.	A.	P	Rs	A	P	Rs.	A	P	Rs	A	P	
Northern Division	Sal logs	459	20,704	0	0	3,614	14	0	448	11	0	4,063	9	0	16	13	7	
	Beeja logs	10	480	0	0													
	Saj logs	6	282	0	0													
	Sal sleepers	106	11,022	0	0	...	...	...	...	...	...	...	...	...	...	...	...	
	Teak logs	170	3,078	0	0	416	0	8	...	...	...	416	0	8	13	8	3	
	Beeja and Dowia sleepers.	612	816	0	0	342	4	0	...	...	...	342	4	0	41	15	0	
	Bamboos	36,220	...	...	...	338	13	2	100	9	7	439	6	9	...	...	...	
Western Division	Teak poles	896	...	...	...	53	2	0	...	...	...	53	2	0	...	...	...	
	Bamboos	3,151	...	...	...	177	8	0	...	...	...	177	8	0	...	...	...	
	Teak railway keys	3,000	...	...	...	105	0	0	...	...	...	105	0	0	...	...	...	
Southern Division	Teak logs	10,518	119,127	0	0	30,988	3	3	6,907	3	6	37,895	6	9	25	6	7	
	Teak sleepers	18,771	58,641	0	0	12,454	11	1	2,776	2	6	15,230	13	7	22	6	9	By conversion from stock on hand. Expenditure on collection of the rough material has been separately shown.
	Teak scantlings	2,705	3,694	0	0													
	Teak planks	2,096	3,955	0	0													
	Teak piles	40	1,279	0	0													
	Teak squared logs	76	354	0	0													
	Teak khakers	140	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Central Division	Teak pieces	259	...	...	...	5	2	0	551	10	2	1,096	3	5	...	...	...	
	Teak khakers	532	...	...	...	302	0	0										
	Bamboos	19,338	...	...	...	237	7	3										
Saugor Division	Teak logs	22	238	0	0	...	...	...	...	...		...	...	...	...	...	...	
	Teak bullees	13	...	...	...	1	12	0	3	15	2	5	11	2	...	...	...	
	Teak mulga	1	...	...	...													
	Teak koorwas	6	...	...	...										...	...	...	
	Teak bullees	426	...	...	...	179	0	1	404	8	10	583	8	11	...	...	...	
	Koha logs	7	175	0	0	...	...	...	...	...	...	...	...	...	...	...	...	
	Total	99,580	253,845	0	0	49,215	13	6	11,192	12	9	60,408	10	3	...	...	...	

No. 27 A.

Statement showing the amount expended on the transport of Timber from Forest Depots to Stations during 1875-76.

From	To	Distance.	Number of Pieces.	Cubical contents.			Timber expenses.			Cost of Establishment.			Total amount expended.		
		Miles.					Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Kisli ..	Tilri ..	Average 8	446	12,698	0	0	3,433	15	1	339	11	4	3,773	10	5
Tilri ..	Mandla ..	30													
do. ...	do. ...	30	41,220	...	...	...	26	12	6	...	...	...	26	12	6
Jagmandal ...	do. ...	40	1	31	0	0	3	8	0	...	...	...	3	8	0
Choharigogarh ..	do. ...	30	17	295	0	0	11	0	6	...	...	...	11	0	6
Mandla ..	Suckri ..	7	446	12,698	0	0	860	6	8	193	5	10	1,053	12	6
do. ..	do. ...	7	41,220	...	0	0	171	13	9	...	...	...	171	13	9
Suckri ...	Gowari ...	75	527	8,476	0	0	1,650	8	10	76	0	0	1.726	8	10
do. ...	do. ...	75	33,425	...	...	...	22	11	9	...	...	...	22	11	9
Gowarighat ...	Jubbulpore ...	5	169	592	0	0	13	5	6	...	...	...	13	5	6
do. ...	Wardha ...		8,178	25,023	0	0	17,521	4	3	...	...	...	17,521	4	3
Bori ...	Mortakka ...	...	591	...	...	...	37	0	0	...	...	..	37	0	0
Tulwara ...	Allapally ...	8	181	5,270	0	0	*								
Allapally ...	Kirmiri ...	40	17,356	54,210	0	0	11,342	10	5	2,528	5	7	13,871	0	0
do. ...	Gurh Ahiri ...	8	3,256	10,172	0	0	146	9	1	33	8	7	180	1	8
do. ...	Wongapally ...	10	266	360	0	0	9	0	3	2	0	0	11	0	0
do. ...	do. ...	10	2,453	...	...	...	...	...	...	...	...	...	...	...	...
do. ...	Kacanada ...	...	100	180	0	0									
do. ...	do. ...	...	1,000	...	0	0									
do. ...	do. ...	...	36	341	0	0	36	7	6	8	0	4	44	7	10
do. ...	do. ...	...	35	1,555	0	0									
Chichgondi ..	do. ...	...	15	576	0	0									
Allapally ...	Harrambaghat ...	46	20	302	0	0									
Chichgondi ...	do. ...	...	445	5,363	0	0	1,682	7	1	374	14	6	2,057	5	7
Gurh Ahiri ...	do. ...	46	93	439	0	0									
Allapally ...	Pothra ...	119	4	121	0	0	266	8	3	59	4	7	325	12	10
do. ...	Hinganghat	124	680	2,136	0	0	1,393	10	5	310	11	6	1,704	5	11
do. ...	do. ...	124	73	340	0	0	202	1	2	45	0	3	247	1	5
do. ...	Kirmiri ...	46	270	289	0	0	119	12	0	26	11	10	146	7	10
do. ...	do. ...	46	28	79	0	0	...	...	...	...	...	...	...	...	...
do. ...	Borghat ...	32	397	620	0	0	153	9	1	34	1	7	187	10	8
do. ...	do. ...	...	214	397	0	0	...	...	...	...	...	...	...	...	...
do. ...	Chassnala ...	104	191	444	0	0	313	13	0	69	15	10	383	12	10
do, ...	Warora ...	98	38	222	0	0	393	0	1	87	9	5	480	9	6
Kirmiri ...	Bullarpur ...	46	22,690	71,059	0	0	2,134	13	4	475	14	3	2,610	11	7
do. ...	do. ...	46	1,957	2,309	0	0	133	12	0	29	13	9	163	9	9
do. ...	do. ...	46	347	287	0	0									
Bullarpur ...	Toolana ...	46	23,521	73,469	0	0	3,673	12	11	818	14	10	4,492	11	9
do. ...	do. ..	...	1,354	1,610	0	0	54	14	7	12	7	8	68	9	6
do. ...	do. ...	...	522	432	0	0	1	3	3						
do. ...	Railway line ...	50	651	2,052	0	0	613	2	1	143	5	1	786	7	2
Toolana ...	do. ...	16	27,965	87,363	0	0	5,434	2	6	1,211	3	8	6,645	6	2
Chichgondi ...	Kirmiri ...	40	347	287	0	0	50	13	6	11	5	7	62	2	7
Gur Ahiri ...	do. ...	40	1.644	1,872	0	0	33	5	9	7	5	7	40	11	4
do. ...	do. ...	...	3,256	10,172	0	0	1,499	7	10	334	1	11	1,833	9	9
Hurrambaghat ..	Tideeghat ...	112	558	6,105	0	0	1,810	11	11	403	10	8	2,214	6	7
Tideeghat ...	Kamthi ...	40	558	6,105	0	0	561	0	6	125	0	7	686	1	1
Korai ..	do. ...	48	11,518	...	...	...	358	12	8	78	12	10	437	9	6
do. ...	Nagpur ...	58	6,047	..	...	...	183	4	9	78	12	10	262	1	7
do. ...	do. ...	...	209	...	...	...	156	12	0	78	12	10	235	8	10
do. ...	do. ...	...	148	...	...	...	37	0	0	78	12	10	115	12	10
Khapa ...	Kamthi ...	30	24	...	...	...	3	2	0	78	12	10	81	14	10
do. ...	Nagpur ...	40	500	...	...	...	100	0	0	78	12	10	178	12	10
Bermanghat ...	Saugor ...	66	13	238	0	0	65	8	6	3	0	0	68	8	6
							56,747	10	6	8,238	5	9	64,986	0	3

* Charges were mixed up with those for bringing fresh timber from forest and cannot be separated.

FORM No. 28.

FOREST DEPARTMENT, CENTRAL PROVINCES.

Annual Account of Forest Revenue, for the year 1875-76.

Receipts.		Amount.			Disbursements.	Amount.		
		Rs.	a.	p		Rs.	a.	p
Amount of revenue realized in 1875-76 ...		7,25,335	8	0	Amount disbursed in 1875-76 ...	3,70,763	8	3
Deduct.					Deduct.			
Amount realized on account of previous periods ..		23,783	3	9	Amount disbursed on account of transactions of former periods..	1,184	8	6
Balance ..		7,01,551	15	3	Balance ...	3,69,578	15	9.
Add:					Add:			
Outstanding on account of the year as per Form No. 23 A. ...	Rs. 63,371 6 1				Amount due for transactions during the year under review, but not yet disbursed ...	...	..	...
Minus for bad debts ...	„	63,371	6	1				
Value of the year's transactions ...		7,64,923	5	4	Real cost of the year's transactions ...	3,69,578	15	9

	Rs.	a	p
Value of the year's transactions ..	7,64,929	5	4
Cost of the year's transactions ..	3,69,578	15	9
Balance ...	3,95,344	5	7
Deduct difference between the value of stock at the commencement and close of the year as per Form No. 25 A ..	42,619	3	7
Net results of the year ..	3,52,725	2	0

N. B.—If at the close of the year the value of stock should be in excess of what it was at the beginning of the year, the sale value of the excess should be added to the net results, less such percentage on account of loss and deterioration as past experience has shown to be usual. Should, however, there be a deficiency at the close of the year, a deduction should be made, not of the price at which the stock was sold, but the sum (more or less) that it would take to replace it.

FORM A.

Area of Reserved Forests for 1875-76.

Number	Reserved Forests.	Area in 1874-75		Added during the year.		Excluded or transferred to other heads.		Total remaining in 1875-76.	
		Square miles.	Acres	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.
1	Jagmandal ...	55	..	...	...	16	457	38	183
2	Choharigogarh ...	2	380·91	...	..	...	...	2	380·91
3	Banjar Valley ..	60	..	17	445	...	...	77	445
4	North Phen ...	15	..	...	..	4	617	10	23
5	South Phen ...	60	...	11	525	...	...	71	525
6	Moteenalla ...	5	..	..	...	2	262	2	378
7	Keolikapa ...	10	..	...	..	..	104	9	536
8	Topla ...	70	...	...	..	...	..	70	...
9	Bijeragogarh ..	33	68	...	...	..	...	33	68
10	Barela ...	10	46	...	..	...	...	10	46
11	Singrampur ...	10	155	...	...	..	...	10	155
12	Airi ..	...	..	3	230	...	...	3	230
13	Bori ..	37	...	...	...	...	...	37	...
14	Bowergarh ..	118	..	...	..	..	..	118	...
15	Kalibheet ...	260	...	...	...	...	..	260	...
16	Rajaborari ..	250	...	..	...	..	..	250	..
17	Kamapur ...	166	..	...	...	...	...	166	..
18	Saoligarh ...	100	..	...	..	...	..	100	...
19	Punassa ...	143	200	..	..	...	...	143	200
20	Satpura ...	468	172	..	...	...	...	468	172
21	Bemaram ..	19	136	...	...	...	...	19	136
22	Mirkulloo ...	13	159	...	...	...	..	13	159
23	Moharli ...	150	...	150	..	..	..	300	...
24	Hathibari ...	3	203·75	...	..	...	..	3	203·75
25	Kuntra nala ...	5	348	..	...	..	...	5	348
26	Garakota ..	4	339	...	...	..	...	4	339
27	Tigora ...	...	459	..	..	..	...	..	459
28	Ranjeer ..	14	521	...	..	...	...	14	521
29	Ranipura ...	11	346	...	..	..	..	11	346
30	Hatkoo ..	28	638	...	..	...	...	28	638
31	Pandratola ..	7	480	..	...	...	...	7	480
32	Dhuga ..	..	..	22	91	...	...	22	91
33	Erjhar ..	...	...	18	291	..	..	18	291
	Total ..	2,133	171·69	223	302	24	160	2,332	313·69

4 8 76 A D Q. 111 570

FORM B.

Area of Unreserved Forests for 1875-76.

Districts.	Area in 1874-75		Added during the year		Excluded or transferred to other heads.		Total remaining 1875-76	
	Square miles.	Acres	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres
Nagpur ...	390	...	...	...	..	...	390	...
Bhandara ...	549	...	2	...	...	...	551	..
Chanda ...	2,254	...	..	...	150	...	2,104	..
Wardha ...	200	34	...	...	40	382	159	292
Balaghat ...	1,066	495	..	...	79	541	986	594
Upper Godavari ...	931	345	..	...	...	...	931	345
Jubbulpore ..	328	341	...	418	...	...	329	119
Saugor ...	729	..	...	139	...	...	729	139
Damoh ..	858	..	..	...	..	...	858	..
Seoni ..	749	347	...	206	..	...	749	553
Mandla ...	2,293	100	...	..	179	230	2,113	510
Betul ...	860	210	...	...	..	..	860	210
Chhindwara .	633	399	8	320	...	...	642	79
Hoshangabad ...	1,222	369	...	..	...	...	1,222	369
Narsinghpur ...	192	332	...	..	...	...	192	332
Nimar ..	1,658	164	6	152	..	197	1,664	119
Raipur ...	1,377	...	...	...	...	..	1,377	...
Sambalpur ...	...	..	...	...	..	...	..	..
Bilaspur ...	649	...	..	..	...	...	649	...
Total ...	16,942	606	17	595	450	70	16,510	491

FORM C.

Area of Forest tracts under protection from fire for 1875-76.

Forest tracts.	Area in 1874-75.	Total cost			Additional area protected in 1875-76.	Amount expended in 1875-76.			Total area protected up to 1875-76	Total expenditure incurred up to 1875-76.			REMARKS.
		Rs.	a	p		Rs.	a	p		Rs.	a.	p	
Banjar Valley ..	...	...	...	...	49,725	444	13	1	49,725	444	13	1	From June 1875.
Motinala ...	...	...	...	..	1,658	...	...	..	1,658	...	..	...	From June 1875.
Jagmandal ...	24,503	15,995	8	3	...	484	15	5	24,503	16,480	7	8	From June 1867
Choharigogárh ...	1,660	4,186	3	11	...	102	9	0	1,660	4,288	12	11	From June 1867
Bijeragogarh ...	21,188	1,466	2	10	...	577	1	0	21,188	2,043	3	10	From June 1871.
Singrampur ...	5,955	1,043	3	4	600	170	8	6	6,555	1,213	1	10	From June 1871.
Barela ...	6,446	646	15	1	...	100	6	11	6,446	756	16	0	From June 1872.
Bori ...	23,680	9,158	10	10	...	600	3	0	23,680	9,758	13	10	From June 1864. Burnt at commencement of year about 680 acres.
Bowergarh ...	...	398	9	3	22,400	358	5	11	22,400	756	15	2	From June 1875.
Kalibheet .	7,680	20	0	0	3,840	102	2	8	11,520	122	2	8	From June 1874. Burnt in hot weather of 1876, 500 acres.
Kamapur ..	...	...	..		10,240	24	12	3	10,240	24	12	3	Burnt.
Punassa ..	...	136	4	0	34,100	290	4	6	34,100	426	8	6	From June 1875 Burnt before close of the year, 1,640 acres.
Rajaborari ...	...	...	...	..	14,080	302	9	11	14,080	302	9	11	From June 1875. Burnt 6,500 acres.
Saoligarh ..	...	...	...	...	17,920	339	9	4	17,920	339	9	4	From June 1875 Burnt 3,200 acres.
Satpura ...	31 210	3,000	6	7	32,000	1,175	14	6	63,210	4,676	5	1	1,240 acres from June 1869, 29,970 from June 1871 and 32,000 from June 1875. Burnt after close of year 8 700 acres
Hathi Bari ...	2123	1,966	15	9	...	139	6	0	2,123	2,106	5	9	From June 1870.
Bemaram ..	11,936	1,486	12	10	360	2,021	0	5	12,296	3,507	13	3	6,476 acres from June 1872, balance from June 1874
Mukulloo ..	...	...	..		5 268	553	7	3	5,268	553	7	3	From June 1875.
Moharli ...	13,440	865	9	11	25,996	1,816	7	8	39,436	2,682	1	7	13,440 acres from June 1874, balance from June 1875
Garakota ...	2,899	15	0	6	...	23	7	0	2,899	38	7	6	From June 1874.
Huthkoo ...	746	7	9	0	9,852	85	10	0	10,598	93	3	6	746 acres from June 1871, balance from June 1875 Burnt 450 acres.
Ranjeer ...	...	..	...	...	9,000	14	4	9	9,000	14	4	9	From June 1875.
Total ..	153,466	40,894	0	1	237,039	9,736	15	7	390,505	50,630	15	8	
Deduct failures ..									31,910				
Balance actually protected ..									358,595				

FORM D.

Prosecutions for breaches of the Forest Rules for 1875-76.

Nature of offences.	Trespass.		Injury done to forest by fire		Unauthorized felling or appropriation of timber		Unauthorized appropriation of minor forest produce.		Grazing without permission or in tract in which grazing is prohibited.		Unauthorized breaking up of forest land for cultivation		Total.		
Divisions and Districts.	No. of cases	No. of persons.	No. of cases.	No. of persons.	No. of cases.	No. of persons.	No. of cases.	No. of persons.	No. of cases.	No. of persons.	No. of cases	No. of persons.	No. of prosecutions. No. of cases.	No. of prosecutions. No. of persons.	Convictions obtained. No. of persons convicted.
Northern Division ...	...	...	..	...	2	2	4	9	...	...	..	...	6	11	10
Western Division ...	...	...	1	2	5	14	1	5	3	5	2	24	12	50	41
Southern Division ...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	..
Central Division ...	..	...	...	..	...	...	..	..	...	..	...	...	2	12	12
Eastern Division ...	..	..	..	..	...	...	...	...	...	...	...	..	...	...	...
Saugor Division ...	1	2	3	6	5	8	4	4	6	9	...	..	19	29	23
Total Divisions ...	1	2	4	8	12	24	9	18	9	14	2	24	39	102	86
Nagpur ...	..	...	...	...	3	5	...	...	...	...	...	...	3	5	5
Bhandara ...	..	...	..	...	8	36	...	...	...	..	...	...	8	36	32
Chanda ...	...	..	...	...	99	227	3	13	..	...	...	...	102	240	240
Wardha ...	...	..	...	...	13	43	...	...	4	14	...	..	17	57	46
Balaghat ...	...	...	..	..	..	..	...	...	..	...	1	2	1	2	...
Upper Godavari ...	...	...	..	...	2	13	...	...	..	...	..	...	2	13	12
Jubbulpore ...	...	...	...	...	5	12	2	3	...	...	..	...	7	15	7
Saugor ...	...	...	...	..	43	103	..	...	...	...	...	...	43	103	87
Damoh ...	...	...	4	5	10	30	...	...	...	...	1	1	15	36	32
Seoni ...	..	...	...	.	81	198	4	10	6	14	3	11	94	233	193
Mandla ...	...	..	...	...	40	117	...	...	...	..	...	...	40	117	93
Betul ...	..	..	..	...	31	58	...	..	52	82	3	26	86	166	158
Chhindwara ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Hoshangabad ...	...	...	..	...	17	42	1	1	...	...	..	...	18	43	43
Narsinghpur ...	...	...	..	..	10	11	20	61	2	15	..	...	32	87	86
Nimar ...	...	...	..	...	5	9	7	9	2	5	..	...	14	23	22
Raipur ...	...	...	...	...	2	3	...	...	...	...	..	...	2	3	1
Sambalpur ...	..	...	...	..	..	...	...	..	...	...	...	...	...	...	...
Bilaspur ...	...	...	...	..	15	59	3	27	1	2	2	9	21	97	88
Total Districts ...	...	...	4	5	384	966	40	124	67	132	10	49	505	1,276	1,145
Grand Total ...	1	2	8	13	396	990	49	142	76	146	12	73	544	1,378	1,231

FORM E.

General State Forest Return for 1875-76.

Number.	Name of Forest.	Area in acres.	External boundary. Length in miles.	External boundary. Cost of maintenance. Rs.	A.	P.	Internal boundary. Length in miles.	Internal boundary. Cost of maintenance. Rs.	A.	P.	No. of cattle permitted to graze.	Population, including women and children.	Area protected from fire.	Area cleared of creepers.	Area in which matured timber has been cut.	Area from which bamboos and other minor products have been removed.	Total expenditure on Forest, including share of Deputy Conservator's salary. Rs.	A.	P.	Income of Forest from all sources. Rs.	A.	P.
	Northern Division.																					
1	Jagmandal ...	24,503	41·0	93	6	0	...	...	...	...	...	...	24,503	...	...	...	3,545	3	6	...	...	...
2	Choharigogarh ...	1,660 ·94	6·03	17	4	0	...	...	...	...	..	..	1,660	...	...	...	2,457	5	8	...	...	...
3	Banjar Valley ...	49,725	41·40	444	13	1	..	...	.	...	...	...	49,725	..	..	...	17,964	8	1	4,587	8	11
4	North Phen ...	6,423	16·0	..	...	...	...	...	.	...	...	...	..	...	..	...	2,080	4	0	...	...	...
5	South Phen ..	45,965	38·0	...	...	...	...	...	...	...	..	72	..	..	...	...	2,105	4	0	...	...	...
6	Motinala ...	1,658	7·03	8	6	0	...	...	...	...	...	...	1,658	...	...	...	2,080	4	2	...	...	...
7	Keolikhapa ...	6,296	19·0	...	...	.	...	...	...	...	...	...	...	...	...	...	2,089	7	2	...	...	...
8	Topla ...	41,800	36·0	...	...	...	...	...	..	...	....	33	...	...	...	...	20,014	4	8	38,415	0	·0
9	Bijeragogarh ...	21,188	77·0	265	6	6	...	..	...	...	...		21,188	...	...	...	4,223	9	7	41	11	0
10	Barela ...	6,446	14·25	53	0	0	..	...	..	...	...		6,446	...	...	...	2,871	6	0	18	1	7
11	Singrampur ...	6,555	22·50	125	6	6	...	...	...	...	..	25	6,555	...	...	...	2,930	15	0	...	...	...
12	Airi ...	2,150	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	..	...	...	...	...
	Western Division.																					
13	Bori ..	23,680	28·25	193	6	0	19·25	52	13	0	...	...	23,680	...	...	...	3,725	4	1	417	15	8
14	Bowergarh ...	75,520	72·50	208	8	0	14·0	20	5	6	7,471	665	22,400	...	...	53,120	4,408	8	6	2,928	11	3
15	Kalibheet ..	166,400	78·0	65	10	0	16·0	18	1	0	3,254	3,355	11,520	..	..	154,180	4,196	5	1	8,607	0	11
16	Rajaborari ...	160,000	98·0	...	...	...	26·0	144	10	0	18,474	4,437	14,080	...	...	145,920	8,528	4	8	11,307	4	9
17	Kamapur ...	106,240	167·0	..	...	..	21·50	24	12	3	9,407	3,931	10,240	...	...	96,000	4,009	1	7	5,713	3	6
18	Saoligarh ...	64,000	100·0	241	11	0	137·0	27	3	0	12,972	275	17,920	...	...	46,080	4,184	9	2	4,259	2	6
19	Punassa ..	91,720	81·0	...	...	...	45·0	161	0	9	7,107	88	34,100	...	...	57,620	10,202	5	1	9,154	4	0

FORM E.—*(Continued.)*

Number.	Name of Forest.	Area in acres.	External boundary. Length in miles.	External boundary. Cost of maintenance.	Internal boundary. Length in miles.	Internal boundary. Cost of maintenance.	No. of cattle permitted to graze.	Population, including women and children	Area protected from fire.	Area cleared of creepers.	Area in which matured timber has been cut.	Area from which bamboos and other minor products have been removed.	Total expenditure on Forest, including share of Deputy Conservator's salary.	Income of Forest from all sources.
				Rs. A. P.		Rs. A. P.							Rs. A. P.	Rs. A. P.
	Central Division.													
20	Satpura ..	299,692	324·0	92 7 10	247·0	264 1 3	20,348	364	63,210	...	...	121.980	20,542 0 9	14,629 13 2
	Southern Division.													
21	Bemaram ..	12,296	28·50	...	7·0	...	...	...	12,296	...	1,024	...	116,257 1 5	110,560 0 11
22	Mirkalloo ...	8,479	31·56	...	5·31	...	...	...	5,268	..	...	..		
23	Moharli ...	192,000	136·56	80 9 0	...	..	7,072	760	32,136	...	91,699	91,699	11,611 15 3	12,219 6 4
	Eastern Division.													
24	Hathibari ...	2,123·75	7·50	..	..	...	...	33	2,123	...	..	...	969 13 8	824 14 9
25	Kantranala ..	3,548	6·12	...	..	...	..	2	...	...	...	...	556 6 0	... ...
	Saugor Division.													
26	Garakota ...	2,899	10·0	...	...	...	...	5	2,899	..	...	2,899	1,498 15 3	2,527 7 7
27	Tigora ...	459	5·25	...	..	...	265	...	...	..	...	459	1,252 8 7	58 11 2
28	Rangir ...	9,481	33·60	62 10 9	...	...	2,045	...	9,000	...	...	9,481	1,350 14 0	498 12 10
29	Ranipura ...	7,386	44·12	...	...	...	2,718	...	...	...	...	7,386	1,373 1 7	440 7 2
30	Hathkoo ...	18,558	126·0	182 8 9	..	...	2,777	...	10,598	...	...	18,548	1,567 6 0	831 11 10
	Balaghat District.													
31	Pandratola ...	4,960	17·0	..	..	...	...	..	..	...	...	...	...	... ...
	Wardha District.													
32	Duga ...	14,171	..	...	..	...	...	...	...	...	...	...	...	... ...
33	Erjhur ...	11,811	...	..	...	...	..	...	...	...	...	...	...	... ...

FORM F.

Return showing the quantity of Forest produce removed by purchasers from State Forests during the year 1875-76.

No.	Name of Reserve	Building wood. Sold by the pieces. Logs.	Building wood. Sold by the pieces. Small pieces.	Building wood. Sold by the load. 2 bullock carts.	Building wood. Sold by the load. 4 bullock carts	Number of Bamboos.	Manufactured produce. Number of cart axles.	Manufactured produce. Number of mats.	Manufactured produce. Number of baskets.	Fuel. 2 bullock carts.	Fuel. 4 bullock carts.	Grass. 2 bullock carts.	Grass. 4 bullock carts.	Lac, gum, fibres, &c. 2 bullock carts.	Lac, gum, fibres, &c. 4 bullock carts.
	NORTHERN DIVISION.														
9	Bigeragogarh ...	...	...	...	...	...	...	...	...	...	...	121½	..	...	...
10	Barela ..	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	WESTERN DIVISION.														
14	Bowergarh ...	...	150	19	...	..	...	...	...	...	...	80	...	...	...
15	Kalibheet ...	..	2,182	408	1	15,366	...	200	...	64	...	...	...	1	...
16	Rajaborari ...	56	69	958	38	90,302	...	11,588	...	154	20	275	9	40	3
17	Kamapur ...	...	20	284	...	2,607	...	...	...	...	...	78	10	25	...
18	Sowligarh ..	80	67	309	17	56,663	...	...	...	28	30	272	45	...	...
12	Punnassa ...	...	35,050	177	3	188,792	...	...	...	...	...	32	...	15	1
	CENTRAL DIVISION.														
	Satpura. Sonawani ...	21	1,815	...	...	264,004	19	...	...	1,175	...	1,701½	...	...	...
20	Satpura. Korai ...	33	73	..	...	222,271	4	...	...	380	..	2,869½	...	...	...
	Satpura. Pench ..	...	1,559	...	...	74,908	...	...	...	1,034½	..	3,902	...	...	...
23	**SOUTHEN DIVISION.**														
	Moharli. ...	...	...	14	...	745,805	62,848	131,683	55,398	736½	...	4,015	...	...	...
	SAUGOR DIVSION.														
26	Garahkota ...	12	21	...	...	...	122	...	...	509½	...	42¼	...	3	...
27	Tigora ...	1	114	...	...	...	...	...	...	5¾	...	23¼	...	...	...
28	Rangir ...	...	1,018	...	...	6	..	...	...	542¾	...	5½	...	5	...
29	Ranipura ...	...	...	...	...	...	...	...	...	268	...	36	...	...	...
30	Hatkoo ...	...	206	...	...	...	...	...	...	82¼	...	41	...	...	...
	Total ...	203	42,344	2,169	59	1,660,724	62,993	143,471	55,398	4,980¼	50	14,424½	64	120	4

No. 3068/145

FROM

J. W. NEILL, ESQ.,

OFFG. SECRETARY TO THE CHIEF COMMISSIONER,

Central Provinces.

To

THE CONSERVATOR OF FORESTS,

Central Provinces.

Dated Nagpur, 11th August 1876.

SIR,

I am directed to acknowledge the receipt of your report on forest management for the year 1875-76. The report has been drawn up on the prescribed plan, and contains a sufficiently full account of the events and operations of the year The account you have been able to give is on the whole favourable, and the Chief Commissioner will now touch on the more important matters discussed in the report.

2. The total area of the reserved forests which are wholly under the care of your department, is 2,332 square miles. Last year's returns showed an area of 2,133 square miles, and there has therefore been an increase, which you explain to have been partly real, partly nominal. The real increase has resulted from the acquisition of the Moharli reserve in Chanda with an area of 150 square miles; and of the Dhuga and Erjhur reserves in Wardha, which cover 22 and 18 square miles respectively. The small reserve of Airi or Ahiri in the Mandla district, originally a plantation, then discarded, and now again taken under management, has also added 3 square miles, but the difference not above accounted for is the resultant of the larger and smaller areas which actual measurement has shown various existing reserves to have. The explanation given in paragraph 2 of the report appears, however, to be incomplete. For instance, regarding the decrease shown in Form A. it is said it "represents the difference between the "estimated area of Jagmandal and the real area as determined by survey," yet the Form A. shows a decrease not only in Jagmandal, but also in the North Phen and in the Motinala reserves. The differences should have been more precisely explained.

3. The Chief Commissioner is glad that steps have been taken to examine tracts of forest land in various districts with a view to the selection of new reserves. Since your report was written proposals regarding the Chandgarh forest in Nimar have been received, and they are now under consideration.

4. Under the head of "protection" you remark on the number of prosecutions under the Forest Act and rules. The prosecutions were 544, involving 1,378 persons, of whom 1,231 were convicted. It is noticeable that for offences in the reserves, only 39 cases involving 102 persons were taken up, the remaining cases relating to the district or unreserved forests. Considering the vastly greater area of the unreserved forests, doubtless more people would have to be prosecuted, but you refer to a decrease in the number of prosecutions for offences in the reserves, as due to "allowing people in trivial cases to pay at a rate above that

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"ordinarily charged for produce that may have been removed without proper "authority." The plan seems a good one, and must save time and trouble to the forest guards and officials, while it probably proves quite as effective as having people convicted and punished magisterially.

The Chief Commissioner observes that the most common offence, is unauthorizedly felling or appropriating timber, such offences in the district forests constituting three-fourths of the whole. In some of the reports the Chief Commissioner notices a complaint that the Forest Act scarcely allows any punishment for unlawfully cutting timber, &c., except confiscation of the timber cut, implements, &c. It seems to the Chief Commissioner, however, it would be quite possible to prosecute under the Penal Code selected offenders for theft or trespass.

5. A larger area in the reserves has been under protection from fire than in any previous year. Whereas in 1874-75, 153,466 acres were under protection, during 1875-76 the area was 390,505 acres. As might have been expected, complete success has not been achieved, but the amount of success is encouraging.

In the previously protected blocks only 2 fires of importance occurred,—one in the Kurai, the other in the Bori forest. The former was the most extensive and disastrous, and a special report regarding it is promised. In Bori the damage done appears to have been less serious. In the other reserves where fires occurred in protected blocks, the failures are such as must be looked for in first attempts. Still, considering that the fires extended to only 31,910 acres, and that 358,595 acres were actually protected during the year, that the cost of protection per square mile fell from Rs. 20-4-0 to Rs. 17-6 0, and that there is ground to believe that the cost will still further diminish, the results are good.

The Chief Commissioner cannot doubt that the protection of the more important forests from fire must tend to their improvement in every way.

6. With regard to grazing in the reserves, the Chief Commissioner approves of the policy you have adopted. Cattle are carefully excluded from areas under protection from fire, and the Chief Commissioner concurs with you in thinking that little advantage, and only a most trifling revenue, would be obtained from opening to grazing at present some of the reserves that have for some time been under protection, while the possible direct and indirect injury might be very considerable. It is clear that only a very small proportion of the cattle of the Province resort to the reserves at all for pasture, and to exclude cattle from areas under protection cannot be considered a hardship.

The Chief Commissioner is doubtful how far an attempt at fire conservancy without stopping the grazing of cattle would be likely to prove successful. If tried he thinks it should be tried on a very small scale.

7. The coppicing operations referred to in paragraph 20 has not as yet been carried out on a large scale, but the Chief Commissioner is glad to learn that this work has been so carefully set on foot in Punasa. The work is of great importance, and the instruction of subordinates in the work should be carefully attended to. It is to be regretted that in Punasa labour is so scarce. With the completion of the Holkar State Railway works, that difficulty in the way of securing a supply of labour will be removed, but a natural disinclination to labour which you say characterizes the people, it will be less easy to combat. Competition and example are scarcely likely to effect much in the way of improvement, and the establishment of regular forest villages which you seem to contemplate, will probably involve considerable expense. The Chief Commissioner is inclined to hope that the difficulty in getting labour is due more to temporary and less to natural causes than you assume, and that when the present abnormal demand for labour abates, the people will be obliged to take the work they can get. As far

as he knows, the Nimaris have no greater disinclination to work than the inhabitants of other districts.

8. Weeding and clearing operations are said to have been confined to the Kurai block under protection from fire, and in that forest 3 lakhs of seedlings of timber trees are said to have been freed from obstructions to their growth, with manifestly good results. You refer, however, to the difficulty or trouble experienced owing to the work being scattered over large areas, as the forest growth is irregular, and the only way to remedy this appears to you to aid natural production by artificial means. The Chief Commissioner would like to know whether any great obstacles lie in the way of an attempt being made to assist natural reproduction. The Kurai forest is year by year gaining in value and importance, and some additional outlay for the sake of still further improving it would not, he thinks, be thrown away.

9. The Chief Commissioner regrets to learn that the attempts to acclimatize the Eucalyptus globulus continue to be unsuccessful. His own observation of these trees entirely agrees with what is said by you, and he can only hope that some other species of the Eucalyptus may prove more suited to the climate of these Provinces. Of the experiment being made with mahogany trees, it would be premature to say anything more at present than that it looks promising.

10. Concerning the cultivation of lac tried in various forests in all parts of the Provinces, and referred to in paragraph 28, it suffices to note that but very partial success has as yet been attained, but that full time has not yet been allowed for a fair trial. The Chief Commissioner is inclined to think that perseverance will be rewarded with better results, and he wishes the experiment to have a full and fair trial.

11. The only forests from which either timber or inferior wood and bamboos were allowed to be removed, were the reserves of the Saugor Division; of the Western Division, excepting Bori; and of Moharli and Bemaram in the Southern Division From the Banjar forest too dead wood was removed, but no cutting or felling was allowed.

The Chief Commissioner notices your remarks in paragraphs 30 and 31 on the practical necessity of permitting purchasers to cut and remove their own timber, both in the Moharli forest and in the reserves of the Western Division. In the Moharli forest the wood is cut by the residents of the forest, from whom exporters purchase it, and they must be allowed to cut at their own time, *i. e.*, at irregular periods during the intervals of other business, for should they be prevented, the department would find no one to cut when they wanted,—in fact the difficulty is that the wood-cutters can make their own terms with the department, for either they must be employed or no work would be done. In order to neutralize the evil effects of the present system, the plan which is proposed, is to reduce the area in which felling is allowed to its narrowest limits, and then introduce a system under which blocks will be open in rotation. No doubt such a system would enable the department to exercise sufficient control over these wood-cutters. In the Western forests departmental cutting is found too expensive, and purchasers, who are mainly consumers, and not dealers or exporters, are willing to give nearly as much for the produce in the forest as the produce delivered to them

12. The quantity of produce removed from the forests by purchasers is thus shown in Statement F :—

203 logs, 42,344 small pieces of timber, 2,169 two-bullock cart and 59 four-bullock cart loads of building wood ; 16,60,724 bamboos ; 62,993 cart axles; 1,43,471 mats, 55,398 baskets ; 4,980 two-bullock cart and 50 four-bullock cart

loads of fuel ; 14,424 two-bullock and 64 four-bullock cart loads of grass ; and 120 two-bullock and 4 four-bullock cart loads of lac, gum, fibre, &c. Most of the above produce was taken from the forests mentioned above in paragraph 11.

13. There remain the departmental timber operations.

From the Banjar valley forest 430 logs of sal, 6 of saj and 10 of bejesal containing 19,902 cubic feet, were exported and taken to Kisli. From this point 6,240 cubic feet of sal were transported by road to Tilri, and thence 12,91[illegible] cubic feet were floated to Mandla. This timber was next taken 6 miles over land to Sakrighat, and some 8,476 cubic feet were rafted down to Gwarighat near Jubbulpore. The cost of transport is considerable, and is shown by you at 13 annas 4 pie per cubic foot. Even weighted in this way you believe the timber brought down will yield a small profit, but it is clear that every effort should be made to improve the communication between Kisli and Tilri and then between Mandla and Sakrighat. If only water communication can be obtained between these places the Banjar forests will be fully opened up and the timber acquire a much higher value; but should it prove impossible to find a way by water the road by land will have to be turned into a good forest road.

In addition to the timber mentioned, 892 sleepers were cut and 153 teak logs were removed from the Jagmandal forest. In the Southern Division 10,545 logs and pieces were brought to the depôt at Alapili. From this division 28,622 sleepers were during the year supplied to the Wardha Valley State Railway, while some 8,000 more were despatched from Gwarighat near Jubbulpore. Some 6,000 cubic feet of timber were further sent up the Wainganga and Kanhan rivers to Kamptee.

In the Western forest the cutting and collecting was mainly confined to 125,560 teak poles, removed in improvement cuttings.

14. Coming now to the unreserved or district forests, which cover an area of 16,510 square miles, but include much waste land, much of it not covered with even scrub jungle, they are shown in paragraph 40 to have yielded a revenue of Rs. 465,668,—a larger revenue than in any previous year, and yet some of the best parts of these distant forests have been added to the regular reserves, a process which the Chief Commissioner hopes will go on continually until the reserves are very much larger than they are now. It may not indeed be necessary that management of areas selected for eventual transfer to the reserves should be at once undertaken by the officers of the Forest Department. It may suffice at first to mark off the selected area and give it entire rest, withdrawing it from those lands from which the rural and urban population draw their supplies, and then, should circumstances permit, the regular department can assume charge and commence measures of improvement or renovation.

There has been a decrease in the forest revenue of 6, an increase in that of 12 districts. The decreases occurred in (1) Jubbulpore, (2) Saugor, (3) Mandla, (4) Betul, (5) Hoshangabad, (6) Nimar.

In Jubbulpore the decrease was not serious, and was caused by the imposition of higher rates on certain classes of consumers who made great demands on the forests, the higher rates inducing them to resort to private instead of the Government forests. The decrease under these circumstances is not to be regretted, for the Jubbulpore forests are much cut into. Except in Murwara, where leasing is the form of management, the license system is the only one in force, and in spite of some defects it is the most suitable to the circumstances of the district.

In Saugor there was, compared with last year's collections, a considerable decrease, but the last year's collections included a considerable balance due on account of the year preceding it; and allowing for that there is this year an income of Rs. 34,738 against one of about Rs. 36,000 in 1874-75. Here the commutation form of forest management is the principal one, and the withdrawal of 39 villages from commutation is a main cause of such decrease as there is.

As the forests in Saugor lie scattered in various directions and do not form large continuous blocks, there is difficulty in having any system but that of allowing villagers to commute; the separate license system would require for its working an enormous establishment, and though it might better protect the forests, the question is whether it would not do so at an incommensurate cost. For the present at any rate the commutation system must continue. But the Chief Commissioner will be glad if the instructions issued for examining some of the unreserved blocks with a view to their selection as reserves should result in an addition to the permanent reserves of the district. As a complement of the commutation system as applied to villages, forest dues are taken on forest produce entering the larger towns; but in doing this there occurs a difficulty in distinguishing between the forest produce that comes from Government forests and that which comes from private forests. This is a difficulty that must be faced. Either some arrangement should be come to with the owners of private forests, or an establishment must be kept up to guard all the roads leading from Government forests to those towns, and the dues must be levied before the produce reaches the town. It will be for the Deputy Commissioner to consider what can best be done.

In the Mandla district the commutation system prevails, and all local consumption is thus paid for, but dues are taken on all exports from the district. The Chief Commissioner entirely concurs with you in thinking that higher rates might be levied on exports, and that a larger revenue might be legitimately obtained. Mandla with its large forests yields a comparatively speaking small income. Such decrease as occurred during the year, however, was caused by the exemption of persons from the liability to commute who did not use the Government jungles.

In Betul there has been a larger decrease than anywhere else. But this is caused by the abandonment of a plan of taxing all forest produce going to certain bazars, it being taken for granted that the produce was obtained wholly from the Government forests,—an assumption which it has been ascertained was unfounded. The license system is now in force, and though it may have to undergo some modification, it is better than the system that preceded it. One good feature in the year's management, is the attempt that has been made to reduce Dahya cutting to a minimum. It is now carried on to a very limited extent indeed.

In Hoshangabad the license system is exclusively in force, and attention is being given to its further improvement. The decrease of income is not such as to call for serious examination.

In Nimar the decrease is very slight, and appears to be a mere fluctuation Much attention continues to be paid to forest management in this district, and the officers who have succeeded the late Captain Forsyth, who introduced the present system, appear to have walked in his footsteps, and to be anxious to make his system as smooth working as possible. The Chief Commissioner observes with satisfaction that the rates in the district forests have been fixed with reference to those in the Government reserves, and that a first step towards combined working has been made. In imitating, however, the regular Forest department in its more delicate operations much care will be necessary, as the

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district forests do not enjoy the advantage of a highly trained establishment. The Chief Commissioner will be glad to see further attempts at co-operation between the District and Forest officers in Nimar, where the forest land is of importance and forest produce valuable.

Concerning the other districts it is not necessary to say much after what you have yourself recorded. In Nagpur all systems that have been tried at one time or another exist side by side. Commutation in certain cases is necessary, but where the license system is introduced it might seem easy to do without leases of any kind, except perhaps in the case of lac, gums, or such like products, if it were thought that special leases of the right to such produce would prove more profitable. Nagpur, however, yields but a small revenue, and imports timber, fuel and bamboos from without.

In Bhandara the present system, which is mainly a commutation system with certain duties levied on exports, has worked well. The amendments of the system proposed have been considered by the Chief Commissioner, and instructions on the subject will shortly issue. In Chanda the leasing system has been entirely abandoned, and the Chief Commissioner believes that though the immediate results may not be a large increase of revenue, the ultimate result will be both a larger revenue and greater protection of the forests. From Chanda much timber and forest produce was exported, and lessees had every inducement to clear out as much wood as possible. In Wardha the license system has remained in force, and apparently worked well. In Balaghat too, the system of commutation and of the supplementary levy of dues on forest produce removed across certain lines, has continued to work. The Deputy Commissioner should most carefully guard against the denudation of slopes and hill sides, of which he appears to apprehend some danger, and it will be well if the patches of sal and bejasal which he recommends for reservation should be examined. In Sironcha the income varies considerably from year to year according to the sales of teak wood. In Damoh the forest management has been much improved since Lieutenant Colonel Thomson has been Deputy Commissioner. His general remarks on the extension of the license system and the abandonment of commutation appear in every way sound, and in selecting areas for permanent reservation as state forests he is acting quite in accordance with the Chief Commissioner's views. In the meantime, and until they could be brought under regular treatment, such areas might be managed in the way you propose. In Seoni too, much attention has been devoted to the district forests; the combined system of commutation and license is working better and more smoothly,— apparently the people are getting used to it. Still the Deputy Commissioner in his report appears to think the present arrangements susceptible of improvement, and the Chief Commissioner will be glad to consider anything he may have to propose. In Chhindwara, the system of direct management has superseded the system of leasing, with good financial results; but experience is wanted, and the system of direct management requires to be carefully worked. In Narsinghpur the license system continues successful. In Raipur and Bilaspur the license system has made good progress, and a larger establishment and a more careful arrangement of the guards have benefited the revenue.

Taken as a whole the management of the unreserved forests has been fairly satisfactory, and most Deputy Commissioners have given considerable attention to the matter.

15. The receipts and expenditure of the department have been as follows:—

	Reserves		District forests.		Total.
	Rs.		Rs.		Rs.
Receipts	...2,59,661	..	4,65,674	...	7,25,353
Expenditure	...2,84,964	..	85,799	...	3,70,763

There thus accrued a deficit of Rs 25,303 in the reserved forests, a surplus of Rs. 3,79,875 from the district forests, and taking both together a surplus of Rs 3,54,572.

The income from district forests was slightly less than in the preceding year, and in the reserves the excess of expenditure over income was somewhat larger; but this is fully explained, and the results are looked upon by the Chief Commissioner as favourable.

16. The annual timber account shows the stock in hand at the beginning of the year to have been worth Rs. 2,45,144, to which was added during the year Rs. 1,62,541, the value of sales was Rs. 2,28,836. Timber lost is valued at Rs. 81,788, and the closing balance of stock was set at Rs. 2,10,474. This result has not an entirely satisfactory aspect, but you mention that a number of sleepers had been sold at Gwarighat at a low price, as the demand that afterwards sprang up was not anticipated; and you further mention that a quantity of costly and uncertain stock, not ordinarily in demand, had been disposed of, so that the prospects of the department with a good demand for produce which it can supply are good.

17. On the whole, the Chief Commissioner concurs in the opinion expressed by you that the administration of the year has been fairly satisfactory. Works of improvement can be only gradually undertaken, and of all things forest improvement requires time. The Chief Commissioner believes you are fully alive to the importance of providing cheap modes of transport for the produce of distant forests, and of opening up streams and rivers for the purpose. He is also glad to have your assurance, that many improvements have been effected in the management of the unreserved forests. There can be no question that forest management is receiving more attention than at any former time.

18. In paragraph 69 you touch on a very important question,—the instruction of subordinate forest officers. By the means which you propose to adopt, there is reason to hope that some good will be done. A training school is doubtless a *desideratum*, but like many other *desiderata* it is for the present unattainable.

In conclusion I am to say that the Chief Commissioner is glad to be able to acknowledge your own good services and those of the officers of your department, especially those whose names you have mentioned.

I have the honor to be,

Sir,

Your most obedient Servant,

J. W. NEILL,

Offg. Secretary.

No. 1121.

FROM

THE HON'BLE T. C. HOPE,

Offg. Secretary to the Government of India,

To

THE CHIEF COMMR. OF THE CENTRAL PROVINCES.

Department of Revenue, Agriculture, and Commerce.

Forests.

SIMLA, *the 20th October* 1876.

SIR,

I AM directed to acknowledge the receipt of your letter No. 146, dated the August last, forwarding the Annual Report of the Forest Department for 1875-76, and to state that the punctual receipt of this report, as of its predecessors from the Central Provinces, is satisfactory.

2. The area of the State forests has again been increased from 2,133 to 2,332 square miles, the main additions having been the Moharli reserve in the Chanda district, with an area of 150 square miles, and two smaller reserves in the Warda district. In paragraph 14 of your orders on the report you say that the best portions of the unreserved forests must be gradually added to the reserves until these are very much larger than they are now. This is in accordance with the views expressed by the Government of India in its remarks on the reports for 1873-74 and 1874-75, and it appears to the Governor General in Council that such additions to the reserves are particularly necessary in those districts in which no reserves have as yet been formed, or in which the existing reserves are small or unequally distributed. The detailed account given by the Conservator, of the management of the unreserved forests, in paragraphs 39 to 58 of his report, is interesting, and the efforts made in several districts to improve their condition are most praiseworthy; but the results recorded all point in the same direction, *viz.*, that, instead of attempting to establish a system of rotation by periodically closing certain portions, those blocks which it may be possible to close should at once be included within the limits of the permanent reserves.

3. Paragraphs 8 to 17 of the report, and Statement C, give a record of the steps taken and the experience gained in the matter of fire protection. With the exception of a small area burnt in the Bori forest, protection appears to have been maintained in all reserves which had for some time past been successfully protected. It has been noted that the Conservator thinks that the damage done in a forest from which fire has for some time been excluded, may have been over-estimated. This is a question of considerable practical importance, which, however, can only be finally decided on the ground of long-continued and carefully-sifted experience. The Conservator should in every annual report advert to this subject, and record such experience as may have been gained regarding the accumulation and decay of inflammable material in forests from which fires

have been excluded. Meanwhile the instructions conveyed in paragraph 4 of the orders on the report for 1874-75, that the extension of fire conservancy must be slow and gradual, should be borne in mind.

The area successfully protected as compared with the area protected in previous years is understood to have been as follows :

Year.	Number of reserves.	Acres.	Remarks.
1872-73 ...	9	143,000	Excluding Punassa, which failed.
1873-74 ...	9	133,460	„ „ and Moharli, which failed.
1874-75 ...	13	164,164	„ „ and Bowergarh, which failed.
1875-76 ...	21	358,595	„ Kamapur, which failed.

In this year's statement the area protected in 1874-75 is stated to have been 153,466 acres; the figures, however, should apparently be 164,164 acres. If the figures of the report are correctly understood, an aggregate area of 358,595 acres was protected up to the end of last hot season. Thus eight new reserves have been added during the year to the list of those in which protection had previously been successfully attempted, and the aggregate area has been more than doubled. This is satisfactory, and the Governor General in Council does not in any way desire to discourage the extension of this important work, but merely wishes to observe that in the business of fire protection, more than in any other forest business, slow and steady progress seems to be the best plan. If the data recorded in the different reports are correctly understood, fire protection in the Punassa reserve of Nimar was first commenced in 1872-73, when the protection of 7,680 acres was attempted but failed. The same area is reported to have failed in 1873-74 ; and in 1874-75, 17,400 acres were undertaken but failed. It is satisfactory that last year's attempt succeeded to the extent of about 32,000 acres. Successive failures, like those in Punassa, however, seem to illustrate the difficulties in the way of success, and the necessity of slow but steady progress.

4. In paragraphs 20 to 28 an account is given of other work done for the improvement of the reserves. What is said regarding the cutting over of badly grown teak has been read with interest. As explained by the Conservator, the operation is one that requires much care, and the experience gained during each year should be detailed in the annual report.

5. Paragraph 28 relates to the artificial propagation of lac. Although the price of this important product has of late years been subject to considerable fluctuation, it will doubtless maintain its place as one of the chief articles of forest produce exported from India, and the Governor General in Council will be glad to learn that lac is produced artificially to a large extent in the reserves of the Central Provinces.

6. The arrangements for the transport of timber from the Banjar forests to Jubbulpore, explained in paragraph 35 of the report, appear to have been made with care and due regard to economy. The Governor General in Council agrees with you in thinking that efforts should be made either for opening out the barriers in the Banjar and Narbada rivers, or for the construction of good roads where water carriage is not practicable. I am directed to suggest for your consideration whether, whenever you think that the time has come to commence these works, the services of a competent Engineer should not be secured to prepare the needful plans and estimates. Captain Doveton's success in leading considerable quantities of timber from the Ahiri forest up-stream to Kampti and to the terminus of the Warda Valley Railway has been noticed with approval.

The financial results of the year as compared with those of 1874-75 have been as follows —

		1875-76.	1874-75.
		Rs.	Rs.
Receipts	... ...	7,25,335	6,61,779
Charges	... ...	A.—2,40,523 B.—1,30,240	1,78,513 1,15,726
	Total ...	3,70,763	2,94,239
	Surplus ...	3,54,572	3,67,540

The receipts and charges for the reserved and unreserved forests are—

Reserved Forests.

		Rs.	Rs.
Receipts	... .	2,59,661	2,02,116
Charges	... .	2,84,964	2,16,752
	Deficit ...	25,303	14,636

Unreserved Forests.

Receipts	... ...	4,65,674	4,59,663
Charges	.. ..	85,799	77,487
	Surplus ...	3,79,875	3,82,176

7. The steady though slow increase in the yield of the reserves in money and material is satisfactory; for it seems evident from this and previous reports that while their yield is increased, they are carefully protected, and that every effort is being made for improving them. The receipts and charges on account of the reserves during the last four years are stated as follows in the annual reports.

	Area.	Receipts.		Charges.
		Total.	Per acre.	
		Rs.		Rs.
1872-73	1,869	73,705	0·9	1,99,904
1873-74	1,902	1,04,028	1·3	2,11,128
1874-75	2,133	2,02,115	2·4	2,16,751
1875-76	2,332	2,59,661	2·7	2,84,964

The financial results of the administration of the reserves, as recorded in statement 21, shows that during the year under review Rs. 98,780 were expended on departmental timber operations, the amount realised on this account having been Rs. 2,04,623; that on account of the collection of other revenue Rs. 9,525 were expended against a revenue of Rs. 55,038; and that the outlay on protection and improvement of the forests (III, IV, VI and VII) was Rs. 39,070. The aggregate cost of cattle (VIII), plant and tools (IX), and miscellaneous charges (X) was

Rs. 18,412, which amount, together with establishment charges (B), Rs. 1,19,176, has to be distributed under the three great heads mentioned, *viz.*:—

(1) Sales of timber brought to depôt on Government account.

(2) Other revenue.

(3) Protection and improvement of the forests.

The Conservator should be asked in future reports to give a brief analysis of the receipts and charges on account of the reserves in the manner here indicated.

8. From the statements appended to the report it appears that the yield of the reserves in material during the year has consisted of 123,174 pieces of timber removed on Government account, measuring 138,434 cubic feet, and of forest produce removed by purchasers as detailed in Statement F. Of the latter, the Conservator gave in the returns for 1874-75 the estimated equivalent in tons, and if this could be continued in future reports, it would make it possible to form an idea of the average yield of the reserves per acre during the year. Such average rates are not of great value at present, as long as the reserves are worked only to a slight extent, but it is well to make a commencement in this direction.

Besides the four* reserves in the Western Division, which covered their expenses during last year and the year under review, Ahiri, Moharli and Garakota have this year given a small surplus. The Satpura reserve, which gave a surplus in 1874-75, has not covered its expenses in 1875-76.

* Kalebhit. | Kamapur. Rajaborari. | Saoligarh.

9. The comparative statement of the revenue realised from unreserved forests during the last 11 years, recorded in paragraph 40 of the report, shows a steady increase on the whole, though the amounts have fluctuated considerably in several districts. This revenue doubtless is obtained at the expense of the growing stock in these forests. Under the circumstances of the case, however, this seems unavoidable. A strict conservancy management of the vast area of the unreserved forests, interlaced as they are with malguzari forests and cultivated lands, would interfere with the facilities which it is desirable to give to the agricultural population to provide themselves with the forest produce which they require. It would also be very expensive, and its success would be doubtful. Provided, therefore, due care is taken to extend existing reserves, and to form new reserves where such may be needed, it seems right that the forest revenue from the Government waste lands should enable Government to devote the whole revenue of the reserves, and even more than this, to the extension and improvement of these estates which it is proposed permanently to keep under forest.

10. The Governor General in Council is glad to observe that Captain Doveton and the officers mentioned by him have earned your acknowledgment of their good services.

I have the honour to be,

SIR,

Your most obedient Servant,

Offg. Secretary to the Government of India.

REPORT

ON

THE FOREST ADMINISTRATION

OF

BRITISH BURMA

FOR

The year 1875-76.

Rangoon:
PRINTED AT THE CITY PRESS.

1876.

TABLE OF CONTENTS.

INDEX.

	Page	Para.
INTRODUCTION	1	
FIRST PART SPECIAL		
I.—STATE RESERVES		...
A.—DEFINTION		...
Formation of state Reserves only under Forest Rules of 1865 and Notification No. 49		...
and 50 of 1876		1
Sanction of ordinary and special reserves		2
Ordinary reserves to be regarded as state Forest with privileges still unsettled ...	2 —	3
B.—RELATION OF THE PEOPLE TO STATE RESERVES		...
Legal effect of declaring forests reserved		4
Only a limited area of bona fide reserves in Burma, ...		5
Toungyas in all other reserves		...
Ample provision for adjoining villages		6
Settlement of privileges by abandoning area		7
Outer line in Tharrawaddie Division simply prevents new ingress of people ...		8
C.—CONSTITUTION OF STATE RESERVES		...
1. Area of state reserves		9
2. Increase of State Reserves	3 —	10
3. Demarcation of state sanctioned Reserves	4	
Slow progress of demarcation in Prome Division		11
Demarcation of Tharrawaddie teak reserves still subject to correction ...		12
Demarcated reserves in the Rangoon Division		13
No demarcation in other Divisions		14
4. Inspection and protection of boundary lines		...
Eleven more reserves requiring boundary boards		15
Boundary boards split and must be replaced		16
Boundaries in the Rangoon and Sittang division satisfactory		17
5. Limitation to which the present area of State Reserves is subject ...		...
Reserves in Prome and Tharrawaddie division		18
D.—STATE RESERVES PROPOSED		...
Arracan Yoma block approved of by Civil authorities		19
5. Reservation of Cutch tracts successfully opposed by Civil authorities ...	5	
Cutch reserves must be reserved in Prome Civil district		...
Abandoned proposals in the Salween Division again taken up.		20
E. SURVEY AND EXAMINATION OF FORESTS WITH A VIEW OF PROPOSING STATE RESERVES.		...
Demarcation staff		21
Original intention to form ordinary reserves, work begun in February 1875. ...		...
Stopped by withdrawal of Mr. Brown, Assistant Commissioner		...
Work resumed in December		...
Line demarcated excludes new settlers		...
Line kept free of cultivation		...
Villages included within boundaries		22
Alteration necessary in boundaries of the lower Payagyee reserve		23
6. Survey plotted	6	
Toungya grounds examined		24
No: of Karens in Thoungzai forests		...
do do in Koon Beeling		...
do do in Kadin Beeling		...
do do in the Mokkah		...
Valuation surveys in Statement I cost of Demarcation staff		...
Survey of the Magayee Plantation Intended formation of large reserves on the Yoma		25
Examination of forests on Pegu and Lepan Choungs		...
Mr. Ferrars report on the Dally forest		26
Revision of the Prome reserves necessary		27

Page—*Para.*

Exclusion of much teak producing forest 6
This fact previously pointed out by Mr. Ferrars ... ...
Little value of much of the forest in large reserves 7
Policy of reserving outlying tracts to be recognized by Government ... .
Teak forests visited by Mr. Nepean but not reported on 28
F.—MANAGEMENT AND IMPROVEMENT OF STATE RESERVES ... ...
1.—Protection against Fires ... ...
Fire protection successful throughout the Province 29
Fire path round Prome teak plantation successful ... ...
Tharrawaddie reserves successfully protected 30
Manner in which Mokkah Beeling was protected ... ...
Method of protecting Myodwin ... ...
do Boben reserve 8
Cost of Patrol Establishment to be added ... ...
Two fires in the Rangoon Reserve Magayee Plantation how protected ... 31
Tounghoo Plantation successfully protected for the first time 32
Usual successful protection of Salween Reserves 33
Table of results of continuous fire protection 34
New system to be tried at Magayee. ... ... 9— 35
2.—GENERAL PROTECTION ... ... — ... ...
Convictions procured in all cases in the Prome Division, successful prosecution of a case of personating forest officials 36
Prosecutions in Tharawaddie Division fining of a subordinate official for giving permission to fell trees 37
Dismissal of a case by the non appearance of the Government prosecutor. ... ...
No officer to prosecute illicit felling in the Opoh District 10
Convictions obtained in all cases in the Rangoon Division 38
Unauthorized permission given by a Thoogyee to cut a Toungyah ... ...
List of cases of breaches of Forest Rules 39
Allotment of a special beat to each subordinate officer 40
3.—TEAK CULTIVATION 11
A. Artificial by direct Government Agency ... ...
Old plantations planted up with Pymma 41
Failures with Thitka and Padouk at Magayee 42
Largest area planted up in one year ... ...
Table showing history, present state and cost of plantations and Toungyas in State Reserves 12-17 43
TOUNGYAH IN STATE RESERVES . ...
Teak sowing of Karens in their Toungyas at Prome — ... 18—44
Planting of only 28¾ acres out of 200 cut in Tharrawaddie Division 45
Cultivation of teak in the Boben reserve 46
do in the Bwet Choung „ ... ...
do in Gwadouksan „ ... ...
Abstract of teak cultivation in Tharrawaddie Division ... ...
Teak cultivation in Salween Division... 47
Table showing present state and former history of Toungya cultivation ... 19—48
b. Natural Reproduction assisted in State Reserves ... ...
Partial success of natural reproduction in Tharrawaddie Division ... ... 20—49
A brief discussion on the importance of aids to natural reproduction... ... 50
Artificial aid must vary according to the condition of the forest 51
Cultivation other than teak 21
Successful cultivation of Ficus Elastica at Magayee 52
Promising cultivation of Chavenessia Esculenta 53
Failure of experimental cultivation of Ipecacuanha 54
Lac culture successful at Magayee and otherwise in the Sittang Divisions ... 55
Remarks on Rhea grass 56
Sapan wood 57
Gamboge 58
Acacia Arabica 59
Improvement of Burma breed silkworms; introduction of the Tussa worm not secured 60

Page—*Para.*

Failure of experiments with Cardamoms ... ... 22—61
Mahogany Seedlings 62
Vanilla 63
General success of Cinchona plantations 64
4.—Conservancy Works ... ...
Thinning operation in the Prome and Tharrawaddie Divisions 65
Difficulty of supervision in cutting of creepers. 66
Minor Conservancy works at Magayee and Kyekpyoogan 67
Adoption of measures on the site of last year's fire at Magayee ... ... 23—68
Cost of the operation... ... ...
Increasing importance of conservancy operations 69
b. Communications and buildings ... ...
Reroofing rest houses in Tharrawaddie Division 70
Girdling in State reserves *nil.* 71
II. Unreserved Forests ... ...
A.—Constitution of ... ...
Two classes of unreserved forests in British Burma 72
B.—Relation of people to such forests ... ...
Their privileges restricted and unrestricted 73
C.—Area of unreserved forests ... ...
Changes in area effected by formation of new reserves and by increase of cultivation 74
Relation of the two classes altered ... ...
D.—Management and Improvement of unreserved Forests ... ... 25 ...
Fire protection ... ...
Its impossibility in unreserved forests 76
General protection ... ...
Protection of unreserved forests extremely limited 75
Causes which rendered fresh measures necessary ... ...
Notification No. 1 of 1st January 1876. ... ...
Rules for the reservation of certain woods 77
Endeavors to procure co-operation of Civil officers 26 78
Rules for the issue of permits 27 79
Artificial Toungya Cultivation ... ...
Teak cultivation outside reserves ... ... 28—80
Arrangements made with Sorcays not quite successful 81
Discontinuance of teak toungya cultivation in unreserved Forests ... ... 29—82
Natural Cultivation. ... ...
Hindrance by fires in the aid to such cultivation 83
Forest Conservancy works ... ...
Clearing of rank growth in the Tharrawaddie Division 84
Creepers cut in Pegu, Prome, and Tharrawaddie Divisions ... ...
Communications and Buildings ... ...
Blasting operations in the Hlowa Choung 85
Removal of obstruction in the Beeling 86
Ditto of other obstructions 87
Removal of obstacles in the Giek Choung Sittang Division at the Contractor's expense 88
Girdling ... ...
Girdling operations in the Tharrawaddie Division 89
III. Forests in which the right to extract teak is leased to Permit Holders ... ...
List of unexpired leases 90
Repeated renewals of leases per extraction of dead and undersized wood. ... 30—91
Privilege not made use of ... ...
Profit on Thoungyeen timber proved by Departmental working of it ... ...
Claim to renewal refused 92
Permit holders liable to ejection for what ... ...
Ground for failure of an action brought against Government Contractor by Burma Co. 93
IV. Yield and Working of Forests ... ... 31 ...
Introduction 94
Extraction of teak timber from state reserves and unreserved forests ... ...

Page—*Para*

Entirely by Departmental agency ... ... 31—95
No. and cost of teak logs extracted from Prome Division 96
Ditto. from the Tharrawaddie Division ... .
Railway Department permitted to convert small pieces of teak into sleepers ... 97
Extraction of teak in the Rangoon Division 98
Ditto. in the Sittang Division 99
In the Salween Division ... ... 32—100
Failure of contract for the Beeling forest 101

RAFTING OF GOVERNMENT TEAK TIMBER 102
EXTRACTION OF WOOD OF OTHER KINDS BY GOVERNMENT AGENCY .. ..
Extraction of such timber from Tharrawaddie Division for Tharrawaddie state Railway 33—103
Ditto from the Sittang Division 104
From the Salween Division 105
Superstition of Karens a hindrance to their working 106
Extraction in South Tenasserim Division 107

DRIFT TIMBER OPERATIONS .. ..
Salvage operation on the Irrawaddy and Sittang 108
System of salvage imperfect ... ... 34—109
Theft of drift timber a case cited 110
List of cases of theft of timber in transit ... ...

TEAK TIMBER WORKED UNDER PERMIT 35
In the Prome Division 111
In the Salween Division 112

FREE GRANTS OF TEAK TIMBER 113
Particulars ... ...
Total outturn of British Burma ... ...
Outturn of woods other than teak 36 114

DEPÔT WORK AND CONVERSION 37
Transactions of the Rangoon Depôt 115
Public auction sales... ... ... 38—116
Imperfect marks on Depôt wood 117
Long and crooked pieces of timber 118
Conversion of logs into scantlings 119
Cost of conversion ... ...

MOULMEIN DEPÔT KADOE AND BATTERY POINT ... . 39—120
Transactions of the Kadoe timber Depôt conversion of logs into scantlings ... 120
Conversion of logs into scantlings... ... ... 120(*a*)
Disposal of timber by auction in the Rangoon depôt ... ... 120(*b*)
In the Moulmein depôt ... ... 40—121
Mode of payment described 122
Higher rate realized by conversion 123

DISPOSALS IN OTHER PARTS OF THE PROVINCE ... ...
Transaction in other divisions 124
Table showing totals of disposals. ... ... 41—125

WORKING STOCK.—ELEPHANTS ... ...
No. of Departmental elephants 126
Sickness and mortality among the same 127
Purchase of new elephants ... ... 42—128

DEAD STOCK ... ...
Purchase of dead stock 129
COMMUNICATION AND BUILDINGS ... ...
Buildings in the wood depôts 130
CONTRACTORS ... ...
Transactions with contractors 131
Gradual diminution in the practice of part payments... 132
Part payments in Rangoon Division abolished ... ... 43—133

	Page	Para.
MANAGEMENT OF THE KADOE REVENUE STATION AND SUMMARY OF YIELD OF TEAK FORESTS BEYOND THE FRONTIER	43	...
(a).—Kadoe		...
General description of Kadoe Revenue work		134
Kadoe Salvage		...
Revenue on Foreign timber levied under Notification 5 F.	44	...
Receipts at Kadoe Revenue station		135
Causes of increased outturn		...
Dacoities in connection with the station		136
Comparative Statement of import of Foreign timber for 3 years		137
Large increase of inferior timber		...
Question as to the cause of the same		...
Decrease of British timber		...
The Permit system		138
Period coming when Forest leases can be rebought	45	
Specification of British Permit timber		139
Reason for increase of inferior timber		...
Logs which paid duty in 1875-76		140
Amount realized on this head		...
Advalorem duty on selling price a perfect success		141
Registration office at Kadoe		142
Increase in new marks		143
Increase in renewals		...
Breaches of Revenue rules, list of cases of	46	144
Balance sheet of Revenue Station	47	145
(b)—TIMBER IMPORTED INTO PEGU		..
Burma timber duty free		146
Imported by Sittang and Irrawaddy		...
(c)—GRAND TOTAL OF THE TIMBER IMPORTED		...
Total imports		147
SECOND PART		...
FINANCIAL		...
Summary of Receipts and Expenditure		148
Net profit explained		...
Table of per centage on profits	48	149
Remarks on Form No. 21		150
Comparison of items of revenue		151
Comparison of expenditure		152
Actual revenue and expenditure compared with Budget Estimate		153
Assets	49	...
Outstandings by Contractors		154
Elephants loaned		155
Outstandings of timber sold		156
Timber dues		157
Cost of extraction of Government timber		158
Table of outturn and expenditure from 1856-57 to 1875-76		159
Average price of timber for the year		160
Table of prices realized on Government timber from 1856-57 to 1875-76 ...	50	161
Table of net profits on Permit timber for same period		162
Average of Government and Permit timber profits on converted teak timber ...		163
Profits on converted teak timber		164
Timber other than Teak	51	...
Profits on timber other than Teak reviewed		165
Profits on Padouk		...
Small profits on Thitka Thitkado &c.		...
GENERAL REMARKS		..
British Burma teak trade		...
Export of teak from Rangoon		166
From Moulmein	52	167
Profits of Timber trade diminishing...		168

Page—Para

Girdling operations need not cease 169
Comparative Statement of teak trees girdled and logs extracted from 1856 57 to 1875-76 53—54 170
Apparant exhaustion of the Salween Forests 171
Mr. Ferrars' report on the examination of the Thoungyin Forest ... ... 55—63 ...
Outturn from Foreign forests will not decrease ... ... 64—172
Improvement possible in Teak timber trade 173
Increase of local consumption of teak ... ... 64—174
Trade in other woods ... ...
Exports from Rangoon 175
From Moulmein ... ...
Local consumption 176
Artificial creation of a foreign demand, necessity for 177
Mr. Whittall's report on the Forests of the Mergui District ... ... 65—75 ...
Proposal for working the South Tenasserim forests 179
Operations unremunerative at first ... ...
Decrease of cost on creation of a market ... ...
Advantage of experimenting on varieties of woods ... ...
MINOR FOREST PRODUCE ... ...
Exports 180
Supply of seed ... ... 76 ...
Local consumption, considerable 181
In bamboos on the decline ... ...
Prospect of its increase, on account of paper manufacture ... ...
Pine resins not a success 182
Gallnuts ... ...
Minor Forest produce noted in Mr. Lee's report 183
Gamboge &c. ... ...
Caoutchouc ... ... 77 ...
Gums, resins &c. ... ...
Liquid amber (altingia) ... ... 78 ...
Tannin Dyes ... ...
Lac ... ... 79 ...
Catechu ... ...
Sappan wood ... .
Ebony ... ...
Canes and fibrous plants ... ...
Odoriferous Woods ... ... 80 ...
Aloe or Eagle-wood ... ...
Dandakoo ... ...
Cosmetic tubercles ... ... 81 ...
Toung-lung-gyaw ... ...
Nathanee ... ...
Oo-ba-ta-gah ... ...
Karraway and Mhanthin ... ...
Edible and lampoils ... ...
Wood-oil ... ...
Bees wax and honey... ... ... 82 ...
Cardamoms ... ...
Birdsnests ... ...
Collection of specimens of wood 184
Its deposit in a Central museum, desirable ... ...
DEPARTMENTAL REMARKS ... ...
Deaths 185
Health of Department 186
Changes in controlling Staff 187
Subordinates ... ... 83—188
Services of Forest Officers 189
Inspections 190
Publications 191

Page.

APPENDIX.

STATEMENT I.—Shewing No : of Teak, Pynkado and Cutch trees counted in Tharrawaddie Division in 1875-76 iii

do do 1A.—Shewing results of Mr. Ferrar's valuation surveys in Thoungyeen Forest in 1875-76. iv — xv

do do II.—Shewing Teak trees girdled and Forest work done in Season 1875-76 xvi

do do III.—Shewing timber brought from the Forests by Permit Holders in 1875-76. xvii—xviii

FORM No. 21.—Annual Summary of Revenue and Expenditure in the different Divisions during 1875-76. xix— xxii

do do 22.—Annual Abstract of Cash Transactions of the Department for 1875-76. xxiii

do do 23.—Annual Statement of Outstandings, and Liabilities of the Department of Contractors and Disbursers in 1875-76 xxiv

do do 24.—STATEMENT of Timber brought from the Forests by Contractors and Government Agency in 1875-76. xxv—xxvii

do do 25.—STATEMENT of Timber received and disposed of from the Forests in British Burma by the Department from 1st April 1875 to 31st March 1876. xxviii

do do 26.—STATEMENT shewing amount realized on account of different classes of Timber received on Government account and sold during 1875-76. xxix

do do 27.—STATEMENT shewing amount expended on account of different classes of Timber received on Government account during 1875-76. xxx— xxxi

do do 28.—Annual account of Forest Revenue for 1875-76. xxxii

APPENDIX A.—Comparative Statement shewing the burdens which Foreign and British Timber have to bear before reaching a Port of shipment. xxxiii

do B.—Shewing cost of feed and keep of Elephants of the Forest Department British Burma during 1875-76 as compared with that of the Commissariat Department. xxxiv

do C.—Shewing expenditure incurred on account of Teak Plantations in British Burma up to close of official year 1875-76. xxxv

do D.—Area of Reserved Forests xxxvi

do Unreserved Forests ...

do Plantation xxxvii

do of Forest Tracts protected from fire ...

do Prosecutions for breaches of the Forest Rules.

do E.—Shewing result of the examination of the Karen Tays and Yahs in the South Tharrawaddie Division during 1875-76. xxxviii

do F.—Exhibiting Foreign Timber account from the year 1856-57 to the year 1875-76 inclusive. xxxix

do G.—Statement shewing the Market value at Calcutta of Teak Timber exported from Moulmain and Rangoon from 1859 to 1876. xl

REPORT

ON

THE FOREST ADMINISTRATION

OF

BRITISH BURMA

FOR

The year 1875-76.

Annual report dated 1st July 1876, on the management and conservancy of the British Burma Forests, for the Financial year 1875-76, by BERTHOLD RIBBENTROP ESQR *Officiating Conservator of Forests.*

SECTION. I

INTRODUCTION.

THE annual reports from the several divisions were received on the following dates.

Prome ...	...	17th May 1876.
Tharrawaddie...	...	15th do
Rangoon ...	...	16th do
Sittang ...	...	4th do
Salween ...	...	11th do
Kadôe ...	...	21st do
South Tenasserim	...	27th April 1876.
Demarcation staff	...	15th May 1876.

Accounts for March 1875-76, were closed on the 6th June 1876.

SECTION II SPECIAL.

I.—STATE RESERVES.

A. Definition.

STATE reserves "Assoya thittau" are forests set apart for the requirements of the country and export trade under articles XIII, XIV, XV and XVI, of the Forest rules of 1865, and under the provisions of Government Notifications 49 and 50, dated 30th March 1876. No other rules are in existence under which State reserves can be constituted.

State reserves can only be formed under Forest Rules of 1865 and Notifications 49 and 50 of 1876.

2. In the Prome and Thayetmyo Civil districts two classes of reserves *special* and *ordinary*, had been proposed and sanctioned; but though the principal of thus dividing State reserves into two classes had once been recognized in Government of India, letter No. 1391 dated 30th December 1874, there seems to be no legal basis for their formation.

Ordinary and special reserves have been sanctioned.

Reserves must be regarded as State forests with privileges still unsettled.

3. All reserves as yet formed are therefore Government Reserved forests, State reserves, Assoya thittau, constituted under the forest rules of 1865, and where Toungyah cultivation is still allowed in them, it must be regarded as allowed by special permission of the officers in charge of Government reserved forests, and Article XIII of Forest Rules of 1865, as far as it prohibits certain acts within the State reserves, must be considered as held in abeyance till the rights and interests of the people, at present enclosed within the boundaries of Government reserved forests, have been completely and permanently settled.

B. Relation of the people to State reserves.

Legal effect of declaring forests reserved.

4. The legal effect of declaring a forest a reserved or state forest is, that the tract demarcated is placed absolutely at the disposal of Government, both as regards soil and produce.

Only a limited area of bona fide reserves in Burma.

At present, however, as already reported in last year's annual, Government possess besides the State fuel and cutch reserves an area, of only thirty odd square miles in which all conditions are enforced.

Toungyahs in all other reserves.

5. In the rest of our reserves, Karens and other toungya cultivators who inhabited the reserved tracts, previously to their being declared State forests, are still at liberty to practice their original wasteful manner of cultivation, provided they do not cut their yahs in teak producing localities. They may also provide themselves free of any charge whatsoever with any forest produce which they require for home use and agricultural purposes, save and except teak and other specifically reserved trees.

Adjoining villages amply provided.

6. The villages adjoining our reserves have, one and all, large areas of forest land outside the State reserves for their own free use, and in every instance, of which there were but few during the year, in which complaints have been made of reserves unduly pressing on the surrounding population, such complaints have been found groundless or nearly so. The adjoining villagers have never been prevented from grazing their cattle during the rainy season, in any of our reserves but those in which no rights of any description are acknowledged.

Privileges must be settled by abandoning area.

7. It has been recognized by the Chief Commissioner in his Resolution on the Forest administration report of 1874-75, Para 8, and by the Government of India in their review thereon Para 4, that the demarcation of State forests is tantamount to useless as long as the cutting of toungyah within them, save for teak reproduction, is not prohibited. This therefore must be done; but to enforce it without undue hardship on the interested Karens, it will be necessary to abandon considerable areas of the Forests in the Prome and Thayetmyo civil districts, which at present bear the name of Government reserves. Mr. Ferrars who, of all Forest officers now in Burma, is best acquainted with that Division, sees no difficulty in selecting large areas in the reserves which are not teak producing.

Outer line in the Tharrawaddie Division simply prevents new ingress of people.

8. In the Tharrawaddie Division all that has been done, is to protect those unreserved forests, in which it is the intention to select the chief reserves, by a boundary line preventing ingress of new settlers. The rights of the people included are as yet in no way interfered with; those of the excluded ones are amply provided for by forests outside the line.

C. Constitution of State reserves.

1. *Area of state reserves.—*

9. The area of state reserves at the end of 1875-76, amounted to 392,794·757 acres.

Teak reserves	3,35,880·89
Cutch reserves	17,600·00
Fuel reserves	39,313·867

The following is a list of reserves free of any rights or privileges:—

Teak.

	Names.		acres.
Sittang Division	Pyoon Choung	...	3,440·75
Rangoon „	Kyetpyoogan	...	1,753 66
Tharrawaddie „	Myodwin	...	40 00
	Mokkha	...	7,200·00
	Beeling	...	6880 00
Salween „	Shwègon	5- 3-8	25 45
	Kolon	3-10-3	
	Thungan Yeenoung	16- 9-4	
Prome.—	Shwè Kyoontau	...	238·00
			19,577 86

Cutch.

	Names.		Acres
Prome.	Thaybyeelah	...	8,000
	Upper Tsatsoowah	...	4,800
	Bangong	...	1,920
	Taindaw	...	2,880
			17,600

Fuel reserves.

	Names		Acres,
Tharrawaddie Division.	Choungnagoon	...	339 20
	Tsatpoko	...	4,652·80
	Tseetqueng	...	2,028·80
	Thendawyo	...	6,400·019
	Extension of Tseetqueng	...	711 20
	Choungzouk	...	3,737 984
			17,870 003
Rangoon Division.	Hmawbee Choung	...	1,693·952
	Kyoon Choung	...	8,647·936
	Thitpyat Choung	...	3,065·984
	Thaboo Choung	...	8,036 992
			21,444·864
			39,314 867

The rest of the reserves are still burdened with rights of which the privilege of burning toungyah is the most obnoxious.

2. *Increase of state reserves.*

10. The figures in the foregoing para show that the increase of state forests during the year amounted to 32,294·067 acres.—

Teak reserves	...	Nil.
Cutch „	...	„
Fuel „	...	32,294·067

These are specified as follows.—

	Names.	Acreage.	No. and date of Sanction.
Prome Division Civil District	Tseetqueng extension.	711 20	Public Works Department Notification No. 212, dated 12th September 1875, Page 181, British Burma Gazette.
	Thendawyo.	6,400 019	
	Choungzouk.	3,737 984	
Rangoon Division	Hmawbee Choung	1,693 952	Public Works Department Notification No. 211, dated 17th September 1875, Page 181, British Burma Gazette.
	Kyoon „	8,647 936	
	Thitpyat „	3,065 984	
	Thaboo „	8,036·992	

3. *Demarcation of sanctioned State reserves.*

Demarcation of State reserves not so rapid as expected.

11. In the *Prome Division*, the demarcation of state forests has not made the rapid progress expected in the beginning of last year. Mr. Ferrars who began the work had to be transferred on account of his health, and Mr. Watters who took his place was new, not only to the division, but to the Province and language as well, and accustomed as this officer had been to the more concentrated work in the Punjab, he was perhaps over cautious and objected to disburse monies, the effects of which he did not see for himself. During the year the following four reserves have been demarcated with boundary boards at a cost of Rupees 404-0-0. On the Choungoungyee choung, the Coungoungyee reserve from the end of the Neepatoung choung to the Hill Tracts Reserve and the Tindau reserve, and on the Middle Nawing, the Choungzouk and Guaycho reserves. Round the proposed Toonyea fuel reserve a line has been cleared 20 feet broad, costing Rs. 381-0-0.

Alterations necessary in the demarcation.

12. In the *Tharrawaddie Division* the demarcation of the teak reserves in the Shoaylay District *viz*, Gwaydouk, Kyeebyoo, Kadinzouk, Kadin Tongzin, and Yoma block was carried out by Mr. Nepean but the divisional officer reports, that on a revision of the work he found that alterations were still necessary, before the demarcation could be considered as completed. The fuel reserves in this division have as yet only been demarcated by a blaze line; boundary boards, however, have been affixed where the reserves touch the road. The Thendawyo reserve has been preliminarily demarcated, by Pynma posts on the salient angles and trenches, denoting the direction of the boundary line as well as by a complete blaze line.

Any subordinate can now fix the boundary boards on all these clearly defined lines. Mr. Wild expresses his regret at not having been able to complete the demarcation task set him, but considering the amount of work done in the Tharrawaddie division during the year, with an under-handed Establishment an excuse is quite unnecessary.

Demarcation Rangoon Division.

13. In the *Rangoon Division* the fuel reserves on the Prome road were demarcated and lines were cut round part of them.

No demarcation in other divisions.

14. No demarcation of State reserves took place in the *Western*, *Sittang*, *Salween* and *South Tenasserim* division.

4. *Inspection and protection of boundary lines.*

11 more reserves requiring boundary boards.

15. The boundary lines and blazed lines of the *Prome* reserves have been inspected, and it has been found that boundary boards have still to be affixed round 11 reserves, a list of which has been filed in the Conservator's office and in the office of the Prome Division.

Boundary boards split, and must be replaced.

16. In the *Tharrawaddie division* it was found on inspection that a large number of the boundary boards had spilt and fallen down. I can only explain this, by the surmise that green wood must have been used. New boards have been prepared and will be put up shortly.

Boundaries in the Rangoon and Sittang divisions satisfactory.

17. The boundaries in the *Rangoon and Sittang divisions* have been inspected and found in good order. There are no demarcated boundary lines in any of the other divisions.

5. *Limitation to which the present area of State reserves is subject.*

Reserves subject to limitation of area.

18. The reserves in the *Prome forest division*, with the exception of those free of toungyah cultivation, are all subject to a limitation of area, as well as those of the *Tharrawaddie forest division*, sanctioned on the 6th February 1874.

D. State Reserves proposed

Arracan Yoma block approved of by Civil Authorities.

19. During the year the sanction of the Civil authorities was obtained for the reservation of the Arracan Yoma block, and the Khyeebakyaw and South Mudday Cutch reserves situated in the Thayetmyo Civil district. These tracts therefore require only the sanction of the Chief Commissioner.

The reservation of the 3 Cutch tracts Tadokya, Tulaben and Taychoung proposed in 1873, in the *Prome forest division* (Prome district) has been opposed by the civil officers, and the proposals had to be withdrawn on proof having been given to the fact, that numerous villages were situated within these areas. It will be a matter of some difficutly but also of extreme importance to select Cutch tracts for reservation in the Prome Civil district, which is not only more densely populated than any other portion of British Burma, but where at the same time the villages and hamlets are more scattered about, and are not only fringing the banks of rivers and creeks.

Reservation of cutch tracts successfully opposed by Civil Authorities.

Cutch reserves must be reserved in Prome Civil district.

20. The divisional officer *Salween* division has been ordered to take up again the proposals for the reservation of the East and West Domdamee, Beeling and Yoonzalen tracts, and to make distinct proposals with regard to the reservation of the Maoo Forest in the Attaran district.

Abandoned proposals in the Salween division again taken up.

These proposals were held in abeyance according to Conservator's letter No. 969-93 of 1874, Major Seaton explaining, "that the Chief Commissioner having submitted for the orders of Government a new scheme for selection of special reserves, as proposed by him, it would be premature and in fact to no purpose to send in proposals just then to the Civil authorities." This and other objections to the proposals have become obsolete.

E. Survey and examination of forests with a view of proposing State reserves.

21. Mr. A. Hough on the part of the civil authorities and Mr. Popert assisted by Mr. Oliver and the Senior Forest ranger of the Tharrawaddie division, were deputed to survey and examine the forests of the *Tharrawaddie* division with a view of proposing State reserves.

Demarcation staff.

It was originally the intention to form ordinary reserves in the Tharrawaddie Division, similar to those sanctioned in the Prome Division, and in February 1875, Mr. Popert and Mr. A. O. Brown, Assistant Commissioner at Mingyee, began the selection of such reserves, but their work was suddenly stopped by the withdrawal of Mr. Brown.

Originally intended to form ordinary reserves. Work begun in February 1875. Stopped by withdrawal of Mr Brown Assistant Commissioner.

In December last the work was resumed by the staff noted in the beginning of this Para, and a line was surveyed including all the more valuable teak producing areas in the Tharrawaddie Division, with the exception of a few outlying forests *viz.* the Tankkyeen Choung, the Shinthegoh, and the Htienden Choung forests.

Work resumed in December.

The line has been demarcated by a continuous blaze line, marked with V. R. and proclamations have been issued by Mr. Hough, who was vested with the powers of a Deputy Commissioner, that new settlers will not be allowed to enter the tracts within this line, but that inhabitants of the areas enclosed will be at liberty to exercise toungyah cultivation, subject only to the restriction laid down by the Forest rules of 1865, forbidding the cutting of yahs in teak localities.

Line demarcated excludes new settlers.

The line is kept everywhere a sufficient distance from Burman and Yabine permanent cultivation and does not therefore inflict any unnecessary restraint and hardship upon the villagers.

Line kept free of cultivation.

22. Two villages only have been included within the line *viz*: Touktay and Gwaydouksan. The former was bought out for Rs. 200 which they agreed to accept as a compensation. The village of Guaydouksan remained inside the line. Rs. 10 were awarded as compensation to a resident of Payagyee for some mulberry gardens included within the line.

Villages included within boundaries.

23. The demarcation officers recommend an alteration in the Boundaries of Lower Payagyee reserve, which, in no instance, they report, is further than 100 yards from the permanent cultivation of the Payagyee village. It is worth noting that this is stated as the only instance in the Tharrawaddie division, where a reserve presses rather hardly on the neighbouring villages.

Alteration necessary in the boundaries of the lower Payagyee reserve.

Survey plotted

The surveys of the line have all been plotted roughly and only the fair copying remains to be done.

Toungya ground examined.

24. Mr. Oliver was deputed to examine under Mr. Popert's control, the Forests and Karens toungyah grounds within the line of demarcation. He had completed the examination of the Thoungzai, Koon Beeling, Kadin Beeling and Mokkah districts, when a severe attack of jungle fever prostrated him and forced him to return to Myanoung.

No: of Karens in the Thoungzai.

In the Thoungzai forests 9 Karen tays were visited with a total population of 218 souls including 66 dahs. The average cut per dah is 4 acres per annum.

In the Koon Beeling.

The Koon Beeling district contains one tay with 30 souls, which includes 4 dahs, cutting at the same average per annum.

In the Kadin Beeling.

In the Kadin Beeling were found 7 tays with a total population of 336 souls, 43 of which were yah cutters, cutting however 5 acres per man. 28 men of these tays cultivate permanent paddy land.

In the Mokkah.

In the Mokkah District the number of tays is 4, populated by 193 inhabitants, 49 of which are yah cutters, cutting 6 acres per man per annum.

Particulars will be found in appendix E.

Valuation Surveys in. Statement I.

Statement I contains the valuation surveys.

Cost of demarcation staff.

The total cost of the demarcation work including salaries and allowances amounts to Rs. 11,084-4-6.

Survey of the Magayee plantation.

25. In the *Rangoon*, division a survey and map have been made of the tract near Magayee, including the areas taken up for arboriculture and other experiments. The proposed reserve has been demarcated by a blaze line and will in all probability soon be sanctioned, as every complication with existing rights has been avoided.

Formation of large reserves on Yoma intended.

It is the intention at present to connect all reserves in the Rangoon division towards the Yoma, and to form one large reserve on the west of this mountain range.

Examination of forests on Pegu and Lepan Choungs.

Mr. Anstruther examined the forests on the Pegu and Lepan Choung with a view of selecting boundary lines suitable for state reserves ; since then he has visited the Baunee and Tandorgyee forests as well as these on the Binedah, Yainway and Zamayee rivers with a similar object. He reports 6 Karen tays on the Zamayee and 3 on the Thaimay Choung, the names of which are entered in appendix. E.

Report on the Dully forest.

26. In the *Salween* division the Dully forest in Attaran district was examined by Mr. Ferrars, Assistant Conservator of Forests, with the view of establishing extensive plantations as near as possible to the market. The report was favourable and the forest will as soon as possible be taken up as a reserve.

Revision of the Prome reserve necessary.

27. The present constitution of the *Prome* reserves, demands their revision and redistribution. These reserves were taken solely on the principle of noninterference with any rights or supposed rights, and not on the basis of the value of the selected tract as forest land.

Much teak producing forest excluded.

Dr. Brandis in his suggestion on the Forest Administration in British Burma remarks "that there are numerous teak localities in the plains of the Prome district outside the outer line such as Shwaykyoon tau, near Emmah, which should be included within the reserves." These are doubtlessly some of the most valuable forest tracts in the Prome district, though small and cut up, which latter condition ought to be regarded as a most weighty reason for their reservation and not as it has been, a reason against their being reserved. Mr. Ferrars pointed out this mistake some years ago, but unfortunately involved himself in a generalization of the subject, in which this, his strongest point was lost sight of.

This fact previously pointed out by Mr. Ferrars.

The large compact reserves in Prome contain large areas which produce no teak, and others which are, in consequence of their distance from the floating Choungs, of nearly as little value.

In large reserves much of the forest is valueless.

It will have to be distinctly recognized by Government, that it is their intention to reserve these outlying tracts, subject to a fair and equitable settlement of existing rights, or the opposition, which must be expected, will prevent their reservation altogether, or at least put off the ultimate sanction till there is nothing left to reserve.

The policy of reserving these outlying tracts must be recognised by Government.

28. In the *Sittang* division 18 blocks of teak producing forests were visited and examined by Mr. Nepean, Assistant Conservator of Forests maps and reports have, however, not been received as yet.

Teak forests visited by Mr. Nepean but not reported on.

*F. Management and improvement of State reserves.**

I. Protection against fires

29. Fire protection has been more successful during the year under report and throughout the Province, only a few inconsiderable accidents have to be reported.

Fire protection successful throughout the province.

A Fire path was made around the *Prome* teak plantation at a cost of Rs. 210-4-0 and fire was successfully kept out.

Fire path round Prome teak plantation successful.

30. In the *Tharrawaddie division* the following reserves were successfully protected from fire.

Tharrawaddie reserves successfully protected.

	acres
Mokkah Beeling...	14,080
Myodwin	40
Boben	744
Total	14,864

The Mokkah Beeling reserve is protected in the West and South by a clear cut line 40 feet broad, where the undergrowth is low, and by one of 50 feet where dead bamboo enhanced the danger of fire crossing the ride.

Manner in which Mokkah Beeling was portected.

Thus 2,740 feet were cleared 40 feet broad and 63,350 feet 50 feet broad. The area of the line cleared is 74·88 acres, and the cost of cutting and clearing amounted to Rs. 459-0-0. The trees on this line have been girdled. The fire tracing on the North and East side of the Beeling comprising a length of 51,480 feet, 9¾ miles, was given out in Contract to the sorcays of Panlay tay and Yeatho, who held themselves responsible that no fires occur on these boundaries for a consideration of Rs. 260-0-0 to be paid after the setting in of the rains. The whole outer protection is completed by a small fire line 20 feet broad and 2,200 feet long, along the Beeling costing Rs. 13 6 0.

The reserve was however also intersected by fire tracings and thus divided into three blocks. The area cleared for fire traces inside the reserves amounts to 21 acres and the work cost Rs .210-14-0. A fire tracing from Panlay tay to Mokkah including 4½ acres has been cleared for Rs. 71-0-0 and thus 14,080 acres have been protected by the clearance of 101·38 acres and a cost of Rs. 1,044-6-7 which seems satisfactory. The outer fire tracing was burned away from the reserve.

The Myodwin plantation was protected on the ladder principle,† first introduced by Mr. Greig in the N. W. Provinces, by a fire trace of 500 feet broad at a cost of Rs. 53-0-0.

Manner of protecting Myodwin.

* Note.—Magayee though not as yet a sanctioned State reserve has again been included, as it had been done in all former reports.

† Note--Two parallel lines 15' broad and 500' apart are cleared round the forest to be protected and the belt between the lines is cut up into squares of 500' side by similar intersecting lines.
The squares are burned under supervision.

Bobin reserve how protected.

The Boben reserve is protected on the North by a similar tracing of 500 feet breadth and 5940 feet length, on all other sides by the Boben and Thayet Choung. A further tracing 50 feet broad and 1½ mile in length divides the reserve in two blocks. The cost of this fire tracing has been Rs. 138-0-0, and 13·18 acres were actually cleared, 68·0 acres burned and 670 acres protected.

Cost of patrol Establishment has to be added.

To the expenditure as above given has to be added the cost of Patrol establishment, which is paid only in the year following that under review. This amounts to.

Mokka Beeling	Rs.	310
Myodwin	„	30
Boben	„	270
Total ...	„	610

Two fires in the Rangoon reserves.

31. In the *Rangoon* division two small fires have to be reported, which occurred during April 1876. the larger conflagration of April last having already been noted in last year's report.

At Magayee the fire was stopped after running through about 30 acres, which luckily had only an undergrowth of thin grass and the trees sustained little or no harm. In Kyetpyoogan the area burned amounts to only 10 acres and here too but little damage was done. In both cases the fire was ignited by burning embers having been carried into the Plantations by a high wind.

Magyee plantation how protected.

The Magayee plantation blocks were protected by 40 feet cleared lines and fire was kept out of 1131 acres at a cost of Rs. 896 ; at Kyetpyoogan 673 acres were protected in a similar way at a cost of Rs. 437.

Toungoo plantation successfully protected for the first time.

32. In the *Sittang division* a sufficiently broad fire trace has this year, for the first time been cleared round the Tounghoo plantation and fire has been kept out successfully during the late dry season. The fires occurring in May last have already been reported in last year's annual report.

The first expense has been considerable, Rs. 498-10 have been spent to protect 3,440·7 acres to which will have to be added Rs. 180 for watchers not charged off as yet.

Salween reserves successfully protected as usual

33. The Phapoon and Sinzway reserves in the *Salween Division* have again been successfully protected against fires. This is due however more to their extremely favorable position than to any effort on our part. The cost of keeping fires out of these reserves amounts annually to Rs. 60. only.

Table of results of continuous fire protection.

34. The following table will give as far as ascertainable a statement of continuous fire protection and total amount expended under this head. In the column " previous protection " the figures are only entered in cases where the protection has been without a break

Forest Reserves	Area Protected.	Cost			Previous Protection.		Cost.			Remarks
					Area.	Years.				
Prome Plantation ..	66 12	210		...	..	...	...	...	...	
Mokka Beeling Reserves	14,010	1,413		7	14,080	Last 4 years	5,409	11	3	The Quaymakeing plantation has been protected since 1869 3-16 acre was burnt in 1875 The reserve has been successfully protected for the last 4 years.
Myodwin Plantation ...	40	83	5		40	Last 5 years	190	14	...	¼ an acre burnt in 1873-74
Boben Reserve	670	465	3	3	744	Last 4 years	1,595	.	...	Plantation protected since 1869, but burnt 3 times. The Reserve has been protected for the last 4 years.

Forest Reserves.	Protected.	Cost.				Previous Protection.		Cost.				Remarks.
						Area.	Years.					
Magayee	1,131	896	..	...		...	...	2,738	...	...		Fire passed through portion of the plantation in 1874-75.
Kyetpyoogan	673	437	...	.		..	...	1,609	...	...		Fire passed through the whole of this plantation 1874-75.
Tounghoo Plantation Pyoon Choung Reserve.	3440·7	498	10	...		3,440·7	...	999	...	...		Plantation seriously burnt in April 1875.
Phapoon Reserve ...	1760	...	...	...		...	4	...	...	...		No expense incurred.
Sinzway Reserve ...	8960	...	...	...		8,960	4	120	12	...		The Reserve has been protected for the last 4 years.

35. The protection of plantations against fire by means of a safety belt has been proposed by Mr. Carter, and the experiment will be carried out under that officer's supervision at Magayee. The plan is a feasible one for semi-evergreen forests. New system to be tried at Magayee.

2. General Protection.

36. In the *Prome Division.* Four prosecutions were instituted during the year, and convictions obtained in every instance ; a list of the cases will be found in Para 39 giving a summary of all forest cases tried* Convictions procured in all cases in the Prome Division.

If attention is directed to case No. 1 a fine of Rs. 30 for the cutting of 68 teak trees seems inadequate. Punishment in case No. 1 seemingly inadequate

A case of personating Forest officials was brought to light. Three Burmans represented themselves as a Forester, an orderly, and a writer, and extorted money from the Karens ; all three offenders were apprehended, but the ringleader escaped from the police, and made his way into upper Burma. The two others were imprisoned for 5 and 6 months and fined. This is satisfactory, as the people are inclined always to lay the blame of such extortions on the Forest Department A case of personating Forest officials successfully prosecuted

37. In the Tharrawaddie division 5 cases are reported and convictions were obtained in 3 of them. Prosecutions in Tharrawaddie Division.

In the Sitquin fuel reserve 70 small trees were cut down, but when the offender was prosecuted, it was shown that he had received permission from the Teik Thoogyee. The prosecution was stopped, the official however was fined Rs. 20 by the Assistant Commissioner of Mengyee. A subordinate official fined for giving permission to fell trees.

In the Shoaylay reserves 5 men were charged under Section 425, 126 of the Indian Penal Code for cutting 127 teak trees, but through some misunderstanding our plaintiff Moung Lookay not appearing at the second hearing of the case, it was dismissed. This is to be regretted, but in a Civil Action brought against the offenders we obtained a decree for Rs. 151-6-0. A case dismissed by the govt. prosecutor not appearing.

* This includes all bona-fide forest cases, as I am not able in every instance correctly to separate those which concern State Reserves and Unreserved Forests.

Cases concerning timber in transit and breaches of Revenue rules will be found in other Chapters.

Illicit felling in the Opoh district, no officer to prosecute.

We have reliable information that in the Opoh district in the Western Forest a petty trade in stolen teak trees has been carried on for years, but no prosecutions have as yet been instituted. A forest officer will visit the locality as soon as possible : in the mean time the Deputy Commissioner has instructed the Myoke to prohibit such practices.

We have not even a subordinate available for the protection of these tracts.

Convictions obtained in all cases in the Rangoon division.

38. Six prosecutions in the Rangoon division resulted in every instance in a conviction ; details will be found in the Statement Para. 39.

Unauthorized permission to cut a toungya, given by a Thoogyee.

The only case of Breach of forest rules in the Sittang division brought before Court during the the year was dismissed, the defendant proving that he had permission from the Thoogyee to cut a Toungya in a teak locality, provided he planted teak trees afterwards.

The Deputy Commissioner has been addressed upon the subject with the request to punish the official for his unauthorized permission.

39. *List of Cases of Breaches of Forest Rules.*
(Forest Cases.)

Division.	Forest or locality where offence occurred.	Nature of offence.	No. of persons.	Punishment inflicted.
Prome.	Shoaylay ...	Cutting 68 teak trees.	1	Fined Rs. 30.
	Mahathaman ...	Neglect of duty.	1	ditto
	...	Extortion of money from Karens.	1	Sentenced to 5 months rigorous imprisonment and to pay a fine of Rs. 30.
	...	ditto	1 2	6 months rigorous imprisonment and a fine of Rs. 30.
Tharrawaddie.	Shoaylay ...	Destruction of four teak trees in Toungyahs.	1	Fined Rs. 25 or 20 days imprisonment Fine to be compensation to Forest Dept.
	Tsatpoke ...	Cutting trees in fuel Reserve.	4	Rs. 20 fine or 1 month's imprisonment ; fine if realized to be paid as compensation to Forest Dept.
	Shoaylay ...	Cutting 127 teak trees in Toungyahs.	1	Case dismissed.
	Leit Hlool. ...	Obstructing Toungnyo canal with weirs.	1	Weirs ordered to be removed.
	Beeling ...	Obstructing the choung with Kanyin logs.	1	Case dismissed.
	Sitquin F. Reserve.	Cutting 70 small trees.	1	ditto
	Shoaylay ...	Mischief by destroying teak in Toungyahs.	2	Fined Rs. 30 and one month's imprisonment in default ; the 2nd fined Rs. 30 and two months, in default
Rangoon.	Fuel Reserves.	Felling Pynkado	1	Timber confiscated and defendants sentenced to 12 stripes each.
	do	do	1	
	do	do	1	
	do	do	1	
	do	do	1	
	do	do	1	
Sittang.		Nil.		
Salween.	Attaran ...	Extraction of timber without order.	3	Discharged.

Each subordinate officer allotted a special beat.

40. The allotment of certain defined beats to the Subordinate Establishment has been completed as far as the still numerically weak Establishment permitted, and every Forester has been provided with a map of his beat, neatly mounted in water proof cover.

3. Teak Cultivation.

a. Artificial.

By direct Government Agency.

41. The blocks in the teak plantation near old Panlaytay in the Mokkah Beeling *Tharrawaddie Division* sown in 1862, have been planted up with Pymma during last rains, and the seedlings appeared healthy when last inspected. Old plantations planted up with Pymma.

42. In the Magayee plantation *Rangoon forest division* 150 acres reported as prepared in last years annual report have during the year been sown with Teak, Thitka and Padouk. The counting of seedlings show failures of 8 per hundred for Teak, 50 for Thitka, and 73 per cent for Padouk. Failures at Magayee with Thitka and Padouk.

The large percentage of failures with Thitka is due to the overseer having given all available seed at once to the Shan cultivators, and having kept none for the filling up of blanks which occurred in the first sowing.

The failure of Padouk is attributable to its cultivation on an unprotected open area, the seedlings of this tree not being able to stand the direct exposure to the sun. In proof of this it was observed that nearly every death occured between November and April. The blanks will be filled up with Padouk cuttings, which grow well if planted during the rains.

320 acres have been newly prepared for cultivation in 1876-77 at a cost of Rs. 5120. The old forest on them has been cut down and burned. This will be the largest area planted up within one year. 320 acres the largest area planted up in one year.

43. The following table exhibits in a condensed form the history and present state of Government plantations up to date. Table showing the history, present state.

For table see next page.

Progress Report of Government

Name of Plantation	1857-58.	1858-59.	1861-62.	1863-64.	1864-65.
PROME DIVISION.					
Prome Teak Plantation.	(area 73 acres) ½ acre nursery formed; and 20 acres sown with seed 1½' apart.	35,922 seedlings counted in nursery, & of 7,000 plants in plantation only 700 were left undestroyed by the fire. 2nd nursery sown with 56 baskets seed,	... ...	Clearing of 5½ acres for new plantation. Thinning operation in nursery of 1851.	... ...
THARRAWADDIE DIVISION.					
Myodwin I. Experimental	...	...	½ acre seed sown in lines 6' apart.	Size of largest trees Height Girth. No. 1 21'7" 9" „ 2 21·6¾" 9½" „ 3 20'10" 1' „ 4 20" 9½" „ 5 19¾' 9½" „ 6 15¾' 10¾".	...
do. II	...	...		½ acre transplanted at 3 feet apart in lines 10' apart.	...
do. III	...	...		2 acres transplanted at 3 feet apart in lines 10' apart.	...
do. IV	...	...	...	...	4 acres sown in lines 10' by 3'
Gnapeing Pindino	...	Experimental	...	...	2000 plants sown
Kangyee	...	...	...	...	400 do do 18 acres.
Boben 1866	..	...	...		...
do 1868	...	...	...	...	...
do 1870	...	...	...	...	...
Quaymakine	...	...	...	...	...
do	...	...	...	...	...
Mokka Beeling	...	...	...	...	...
do	...	...	...	...	...
do	...	...	...	...	...
Toungnyo Hill	...	...	...	...	...

Plantations.

1865-66.	1866-67.	1867-68.	1868-69.	1869-70.	1870-71.
...	...	...	...	...	...
...	...	Average height 30 to 35 feet. Average Girth 10·3 in.	...	...	...
	Thinned.				
...	...	Average height 28 to 30 ft. average girth, 11·4 inches.	...	...	...
...	...	Thinned. Average height 20 to 35 feet. Girth 12·2 inches.	...	...	...
...	...	Thinned. Average height 15 to 25 feet. Girth 8 inches.	...	...	...
21 acres sown in lines 9' by 3'	...	...		...	...
...	85 acres sown in lines 10' by 6'.	Weeded	Weeded.	...	17 trees measured height girth Max 36¼ ft. 11¼ in Mini 20 ft. 8½ „ Mean 31 ft. 12¾. „
...	...	...	185 acres unsuccessful.	185 acres restored.	*Fire occured small damage.* Cleared twice. 2119 plants per acre 12 percent failures.
...	...	58½ acres sown in lines 10' by 6' weeded.	Failures in N. end refilled.	594 plants per acre.	*Fire occured small damage.* 70 acres weeded twice. Weeded.
...	...	...	127½ acres sown unsuccesful. 68 acres of above restored. Completed in July 1870.	1994 plants per acre, average height of 224 plants 1'11	Weeded.
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...

Name of Plantation.	1871-72.	1872-73.	1873-74.	1874-75	1875-76.	Remarks.
PROME DIVISION.						
Prome teak Plantation.	...	...	...	...	...	Up to 1864 an area of about 1600' by 400' was fairly stocked with trees.
THARRAWADDIE DIVISION.						
Myodin	...	...	...	...	... Thinned.	Provincial Progress Report for 1867-68 gives the area of the Myodwin plantations at 10 acre 2 rood 39 Poles. The figures in this statement are taken from the journal of Dr. Brandis' tour attached to the working plan.
do II.	...	...	...	...	...	
do III.	...	...	...	...	...	
do IV.	...	...	...	...	...	
Gnapeing Pindino	...	...	...	...	...	Area not known. do
Kangyee	...	...	...	...	...	Prov. Report for 1864-65 gives 30 acres prepared and 18 sown; that of 1867-68 12 acres. These figures are obtained from Divisional report of 1867-68.
Boben 1866	...	17 acres burnt.	...	...	Thinned.	Provincial Report for 1865-66 gives 90 acres as sown & that for 1866-67 an addition of 60 acres; figures obtained as above. From cash book it appears that a plantation was formed in 1864-65.
do 1868	Weeded.					
do 1870	...	...	...	...	...	
Quaymakine	Cleared.	Weeded.	...	...	...	
do	...		...		Thinned & cleared.	
Mokka Beeling	...		...	3 acres experimental	Cleared.	
do	...	...	...	6 acres. Old poonzoe 10' by 10' planted.		
do	...	...	...	...	30·79 acres cleared.	Experimental.
Toungnyo Hill	...	...	...	Cardamon 20 acres. Weeded.		

Plantaions.—(Continued)

Name of plantation.	1862-63.	1863 64.	1864 65.	1865 66.	1866 67	1867-68	1868-69	1869-70.	1870 71.	1871-72
RANGOON DIVISION										
Kyetpyoogan	...	...	...	...	...	...	40 acres planted with teak 6' by 6'.	113 acres added and planted up with teak 6' by 6'.	150 acres added and planted up with teak 6' by 6'.	375 acres added and planted with teak 6' by 6'.
Magayee ...	...	..	..	...	...	...	...	...	...	

N B—Besides the propagation of indigeneous trees other varieties are being cultivated including Ficus elastica C. Esculenta. Sapon, Babool &c. but as none of these are in one compact block it is difficult to give the exact area over which they extend.

SITTANG DIVISION.										
Pyoonchoung	...	...	...	...	44 acres planted in these years.	...	...	...	...	...
do	...	...	...	...		...	120 acres planted.	...	...	...
do	...	...	...	...		...	...	184 acres planted.	Weeded.	Weeded.
do	...	...	...	...	...	...	...	...	296 acres planted	Weeded.
do	...	...	...	...	...	...	...	...	...	...
SALWLEN DIVISION.										
Shwegon	...	...	...	...	...	...	planted acres. 5 3-8	...	..	...
Kolon ...	...	...	...	...	...	...	3-10-3	...	...	...
Thingan ... / Yeenoung..	...	...	...	...	...	...	16- 9-4	...	...	...

Progress Report. of Government Plantations.—(Continued.)

Name of Plantation.	1872-73.	1873-74.	1874-75.	1875-76.	Remarks.
RANGOON DIVISION.					
Kyetpyoogan	Weeded three times, blanks filled in, thinned and pruned, creepers cut, Fire path cleared.	Weeded three times, creepers cut away, blanks filled, cleared Fire path.	Weeded three times, creepers cut away, trees stumped, blanks filled in, fire path cleared.	Roads cleared, All burnt trees stumped, fire path cleared	No records can be found in the divisional office shewing the class of work that was performed between 1868 and 1871. At the close of the official year these plantations could only be pronounced moderately stocked, the trees without exception are undersized for their age, and unhealthy and pole-like in habit of growth.
Magayee ...	171 Acres planted with teak 6 by 6 firetrace cleared.	223 acres added, planted with teak, weeded three times, creepers cleared away, blank filled up, fire trace cleared.	256 Acres added, planted 6 feet apart, mixed culture. Teak ½ Padouk ¼ and Thitka ¼ Weeded three times, creepers cut away, blanks filled in, fire trace cleared.	150 acres added, planted on the same principle as last year, mixture of trees both in respect to description and number being the same, weeded three times, blanks filled in, trees stumped, fire trace cleared. Fire passed through portion of blocks 1872-73-74.	There is nothing on record in the Divisional office to show what work was done in 1871. The plantation may be said to be fairly stocked with trees.
SITTANG DIVISION.					
Pyoonchoung	...	...	...	...	
do	thinned.	...	...	Burnt trees cut back.	
do	Weeded.	Weeded.		Burnt trees cut back.	
do	Weeded.	50 Acres planted.	Slight weeding, attempt to restock.	Partly restocked.	
do	...				
SALWEEN DIVISION.					
Shwegon ...	...	...	...	...	Average height 39 feet. Girth 1'8"
Kolou ...	...	...	...	...	Average height 30 feet. Girth 1'2"
Thingan ... / Yeenoung..	...	...	...	...	Average height 42 feet. Girth 2'

Progress Report of Toungya Plantations.

Names of Plantation.	1862-63.	1863-74.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	REMARKS.
PROME DIVISION.															
														Acres.	
Shoay Hmone ...	...	...	...	...	...	...	...	...	...	...	...	...	...	2·22 sown	
Pho Nay ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1·87 do	
Myat Toon ...	...	...	...	...	...	...	...	...	...	...	...	...	...	0·74 do	
Guan Thin ...	...	...	...	...	...	...	...	...	...	...	...	...	...	4·66 do	
Shoay Zah ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1·04 do	
THARRAWADDIE DIVISION.															
Mokka Beeling ..	...	...	...	...	...	...	...	14 acres 6 by 3.	...	...	...	...	10 acres good.		
do	...	...	...	...	...	...	...	...	12 acres.	.	..	...	4 do bad.	...	
do	...	...	...	...	...	...	...	...	...	27 acres.	...	...	...	...	
do	...	...	...	...	...	...	..	...	...	...	...	159·375 acres.	Cleared.	Cleared.	
do	...	...	...	...	...	...	...	...	..	...	..	...	157 acres.	do	
Thicho	...	...	...	...	...	...	...	7 acres failure.	...	...	...	...	...	28·75 acres.	
do	...	...	...	...	...	...	...		8 acres.	...	...	...	...	...	
Kangyee ...	...	...	...	...	...	...	...	10 acres failure.	-	...	...	...	...	...	
Boben ...	...	...	...	...	...	...	...	17 acres.	...	...	...	...	...	...	
do	...	..	...	...	...	...	...	...	...	...	...	4·25 acres.	...	...	
do	...	...	...	..	...	...	...	...	...	...	...	...	...	30¼ acres.	
Kyoukpyoo	...	...	...	...	...	...	...	...	...	...	..	...	...	...	
choung ...	...	...	...	...	...	...	...	...	...	...	...	...	...	15¼ acres.	
Myoung choung...	...	...	...	...	...	...	...	...	...	...	...	13 acres.	Cleared.	Cleared.	
do	...	...	...	...	...	...	...	...	...	...	...	...	20¾ acres.	do	
do	...	...	...	...	...	...	...	...	...	...	...	...	...	21·18 acres.	
Minhla choung...	...	...	...	...	...	...	...	...	...	...	...	23½ acres.	Cleared.	Cleared.	
do	...	...	...	...	...	...	...	...	...	...	...	...	60 acres.	...	
do	...	...	...	...	...	...	...	...	...	...	...	...	...	84·37 acres.	
Gwaydouksan ...	...	...	...	...	...	...	...	...	...	...	..	...	...	10¾ do	
Bwet choung ...	...	...	...	...	...	...	...	...	...	...	...	...	...	37¼ do	
Thoungzai ...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·93 do	
Mya choung ...	...	...	...	...	...	...	...	...	...	...	...	...	...	4 do	
Shoukpen choung.	...	...	...	...	...	...	...	...	...	...	...	...	...	37¾ do	
Toungnyo choung.	...	...	...	..	...	...	...	...	...	...	...	...	...	15¼ do	
Shoaylay ...	...	...	...	...	...	...	...	...	...	...	...	...	...	11¼ do	

Note.—No Toungya Plantations in the other divisions.

TOUNGYAH IN STATE RESERVES.

Sowing of teak by Karens on their toungyas at Prome.

44. In the *Prome division* 5 Karens have sown teak in their toungyas, 2 in the North Nawing, 1 in the Middle Nawing, and 2 in the South Nawing; but Mr. Watters having died, no record as regards the area or number of seedlings on each yah can be found. They are being resurveyed and recounted, and will be noted in next years report.

In the Tharrawaddie division only 28¾ acres out of 200 cut were planted.

45. In the Mokkah Beeling reserve Tharrawaddie division the Karens cut 200 acres for toungyah, but owing to last year's unexpectedly early rains and a family dispute among the Karens of Panlay Tay, only 13 yahs containing 28¾ acres were burnt and planted.

The number of plants on these toungyas is Teak 11453
Maizellee 941

giving a total of ... ... 12394, or 431 per acre.

The cultivation cost Rs. 102-15-6 in addition to which a capitation tax of Rs. 53 will have to be paid.

Cultivation of teak in the Boben reserve.

46. In the Boben reserve, 13 inhabitants of the Boben village have cut and cultivated 13 yahs, comprising an area of 30¼ acres, at a cost of Rs. 220-4-6 inclusive of a capitation tax of Rs. 65. The area is stocked with 18,640 plants, averaging 616 per acre.

In the Bwet Choung reserve

In the Bwet choung reserve an area of 37¼ acres was cultivated at a cost of Rs. 290-9-0 by the villagers. The average of plants counted per acre is but 232.

In the Gwaydouksan reserve

In the Gwaydouksan reserve 10¾ acres were planted with 10,025 plants at a cost of Rs. 83-8-3.

Abstract of the teak cultivation in the Tharrawaddie Division.

An abstract of the foregoing paras shows that the total of Toungyah cultivation in Tharrawaddie division reserves during the year amounts to 107 acres at Rs. 7 per acre.

Teak cultivation in the Salween Division.

47. In the *Salween division*, 24 toungyahs were sown in the Sinzway reserve at a cost of Rs. 127, showing 12,920 plants on an area of 79 acres, giving an average of only 64 plants per acre. Two yahs sown in the Paphoon reserve were failures.

Table shewing present state & former history of toungya cultivation.

48. The following table shows the present state and former history of Toungyah cultivation within reserves.

Statement of Toungya Teak plantations Prome Division.

Year.	Area acres.	Original cost.	Maintenance.	Total cost.	Remarks.
		North Nawing Forest.			
1875-76.	2·22	...	81-4-0	89-4-0	
		North Nawing Forest.			
1875-76.	1·87	...	68-12-0	74-12-0	
		Middle Nawing.			
1875-76.	0·74	...	27-9-0	32-9-0	
		South Nawing.			
1875-75.	4·66	...	171-7-0	189-7-0	
		South Nawing.			
1875-76.	1·04	...	37-0-0	41-0-0	

Tharrawaddie division Mokka Beeling reserve.

Year.	Area acres.	Original cost.	Maintenance.	Total cost.	Remarks.
1869-70	14	Nil	...	...	10 acres doing well, 4 failed.
1870-71.	12	...	...	...	Cost unknown.
1871.	27	...	...	...	do
1873-74.	159·375	1968-12-0	911-7-0	2880-3-0	
1874-75.	157	1819-4-6	517-13-0	2337-1-6	
1875-76.	28·75	149-1-6	...	149-1-6	
	398·125	3937-2-0	1429-4-0	5366-6-0	
		Boben Choungwa reserve.			
1869-70.	17	80-0-0	20-0-0	100-0-0	
1873-74.	4.25	52-8-0	10-4-0	62-12-0	
1874-75.	30·25	267-12-6	...	267-4-6	
	15·5	399-12-6	30-4-0	430-0-6	
		Kangyee reserve.			
1869-70.	10	...	...	...	Cost unknown, failure.
		Thitcho reserve.			
1869-70.	7	70-0-0	...	70-0-0	Unsatisfactory.
1870-71.	8	...	...	...	Cost unknown.
	15	70-0-0	...	70 0-0	
		Gwaydouksan reserve.			
1875-76.	10.75	126-11-6	...	126-11-6	
		Bwot choung reserve.			
1875-76.	37·25	432-12-0	...	432-12-0	
		Myoung Forest.			
1873-74.	13	199-4-0	83-0-0	282-4-0	
1874-75.	20·75	252-3-0	43-4-6	295-7-6	
1875-76.	21·18	158-1-8	...	158-1-8	
	54·93	609-8-8	126-4-6	735-13-2	
		Minhla Forest.			
1873-74.	32·5	550-14-0	229-1-6	779-15-6	
1874-75.	60·0	716-7-0	150-5-0	866-12-0	
1875-76.	84·37	422-3-0	...	422-3-0	
	176·87	1689-8-0	379-6-6	2068-14-2	
		Thoungzai Forest.			
1875-76.	18·93	131-6-8	...	131-6-8	
		Beeling Forest Nga Choung.			
1875-76.	4	23-2-3	...	23-2-3	
		Mokka Forest Shoukpen Choung			
1875-76.	37·75	178-0-5	...	178-0-5	
		Boben Forest Kyoukpyoo Choung.			
1875-76.	15·25	117-14-3	...	117-14-3	
		Toungnyo Forest.			
1875-76.	15·25	134-10-3	...	134-10-3	
		Shoaylay Forest.			
1875-76.	11·25	76-2-6	...	76-2-6	
		Salween division Sinsway reserve.			
1871-72.	14·00	422-11-0	...	422-11-0	
1872-73.	60·00	...	149-10-0	149-10-0	
1873-74.	19·93	...	62-12-0	62-12-0	Half stocked.
1874-75.	39·37	...	92-5-0	92-5-0	
1875-76.	79·87	...	84-5-0	84-5-0	
	213·17	422-11-0	389-0-0	811-11-0	

Note.—No Toungya plantation in the other Divisions.

b. Natural reproduction assisted in State reserves.

Natural reproduction attempted in Tharrawaddie Division with partial success.

49. A first attempt to assist natural cultivation by other means than only keeping out fire was made in the Mokkah Beeling (Tharrawaddie Division.) Over an area of 30 acres, seed of Teak, Maizallee, Padouk and Kokoh was dibbled in, but owing to the lateness of the work in the season but a very limited success was obtained. Orders have however been issued to sow teak seed in the Mokkah Beeling over the large areas on which the bamboo flowered during the year.

A brief discussion on the importance of aide to natural reproduction.

50. The assistance to natural reproduction is one of the most important questions which concern the future of the British Burma teak forests, and this importance, and the fact that nothing has ever been done in this direction, must serve as an excuse for a short discussion of an abstract question in an annual report.

Condition under which Teak occurs.

The results of surveys of 1868 are.

1st Class	149
2nd „	120
3rd „	418
4th „	1001

per 100 acres.

These trees appear mixed with other trees, either scattered in extensive bamboo forests, or they form a very poor proportion of forests of other foliage trees. In either case, reproduction by the extraction of single teak trees, is extremely difficult, and, in all but very favourable cases, impossible. The present state of our teak forests, and the proportion of young trees to old ones, is no criterion of what will be the ultimate fate of the *peuplement* of the forest area.

Under the Burman Government all houses but royal buildings and Khyoungs were mere bamboo huts, and the local demand therefore was extremely limited, and the vast exportation of teak timber is a trade sprung up within this century. Teak, when left alone has many chances in its favor over other trees; it is long-lived, prolific, and resists fire well on account of its thick bark; and for these reasons succeeded in perpetuating its species through the struggle for existence in a virgin forest.

When bamboo flowered, or a gap occured in the forest by windfall or any other natural cause, a seed bearing teak tree was likely to be to the fore, to cast its seed on the blank thus made. Now although these blanks are still formed, the proportion of teak trees in the *peuplement* is gradually becoming less, and there is less chance of these blanks being filled up with teak.

The extraction of one teak tree here and there, commonly called the selection system, has been carried on since the forests were worked. In the first place the removal of one tree leaves only a small blank which is rapidly filled up over head. Formerly, before the extraction of teak reached its present dimensions, the blank thus formed was more often due to the death of some tree more short lived than teak, and therefore the chances of filling up the vacancies by teak were greater.

There are doubtless numerous teak trees of the II, III and IV classes, a considerable number of which will grow up into first class trees; but nevertheless the gradual deterioration of forests under our present system is certain. Many trees of these lower classes, moreover, will in the ordinary course of nature, never come to maturity; others are already mature as regards age, are in fact undersized, dwarfed through some natural accident or other.

Fire conservancy which is a "sine quâ non" to any healthy natural reproduction, will at once increase the total amount of reproduction, but it will not increase the proportion of teak in the young growth. This all leads to the fact that even with fire conservancy we cannot continue to extract one species alone out of a mixed *peuplement*, without further artificial assistance in the matter of regeneration.

Artificial aid must vary according to condition of forest;

51. The manner in which this artificial assistance must be applied will vary with the condition of the forest. In Bamboo forests advantage must be taken of the flowering of the Bamboo. No seed bearing teak trees ought to be girdled ex-

cept just after this flowering has occurred. As soon as flowering has occurred within a reserve, seed ought to be dibbled in all over the blanks.

In mixed forests of foliage trees round any teak tree chosen for girdling, a number of other trees of whatever species should be girdled a few years previously, and as soon as the teak tree is girdled, teak seed should be dibbled in. Teak seed should also be dibbled in, in any natural opening occurring in a reserve. Fire conservancy, of course, is essential to complete this system. It is well understood that it is necessary to supply the market with teak and to make a revenue, and that therefore the discontinuance of girdling for a long period is impracticable. Both reproduction and extraction can go on together hand in hand, by increasing the amount of artificial assistance to natural reproduction.

CULTIVATION OTHER THAN TEAK.

Ficus elastica.

52. At the end of the year under report 228 trees of Ficus elastica were growing vigorously at the Magayee Plantation, (*Rangoon division*) and there is no doubt that this branch of arboriculture will prove a success, and Mr. Strettell maintains also profitable. Cultivation of Ficus Elastica at Magayee successful.

The average height of the trees is at present; of 144 transplanted last rains into the forest 3 feet 3 inches, of 78 trees into experimental gardens 3 feet 2 inches, and of the 6 older trees planted in 1873, 10 feet 5 inches.

It has been ascertained from the growth of the different plants that the tree favours a shade from South and West, but dislikes dense crowns of large trees overhead; whether this be on account of the drip or for other reasons, cannot as yet be stated.

Chevenessia Esculenta.

53. This branch of forest industry promises also to be a success. At Magayee 719 plants are growing on trees and 6,672 are ready for planting during the rains. The whole cost of the experiment up to date amounts to Rs. 172-0-0. Mr. Buchanan the Superintendent of the Conservator's office has planted some of the creepers on his land near Rangoon, and 130 of these he reports do well. Chevenessia Esculenta

Ipecacuhana.

54. The experiment has proved a failure at Magayee. One plant is all that is left. Ipecacuhana.

55. *Lac.*—The nurseries have been interlined with a forest growth of Cajanus Indica. Natural reproduction of the insect has been successful, and 49 of the larger trees are now being covered with lac. In the Sittang division this cultivation proved a failure. Lac culture

56. *Rhea grass.*—One of the three rhea plants, noted in last year's report Section 35, has been divided into 5. There are now 7 plants all growing vigorously. The 2 plants which were not disturbed seeded in November last. Rhea grass.

57. *Sapan.*—The Sapan trees at Magayee flowered in March and some of the seed has been collected. Sapan trees.

58. *Gamboge.*—940 plants were received at Magayee from Maulmein. They were planted into a nursery and 933 succeeded; they will be transplanted in June. Gamboge plants

59. *Acacia Arabica.*—The seed germinated in 36 hours after sowing and we have now at Magayee some 25,000 seedlings of about 9 inches high. Acacia Arabica

60. *Sericulture.*—The breed of indigenous worms seems to have improved, as neighbouring sericulturists buy Cocoons from Magayee. The introduction of the Tussa silk worm however seems not yet secured. Burman silk worm. Tussa worm.

Failure of experiments with Cardamoms.

61. *Cardamoms.*—The experiment made in the Tharrawaddie division as well as at Magayee to cultivate Cardamoms failed. None of the seed sent from Coorg germinated.

Spanish Mahogany seedlings.

62. *Spanish Mahogany.*—Four seedlings have been raised in addition to the 17 reported last year.

Vanilla plants

62. *Vanilla.*—34 of the Vanilla plants at Magayee grow vigorously. They average about 9 inches in height.

General success of the Cinchona plantations.

64. *Cinchona.*—During the year 31,200 Cinchona seedlings and cuttings, were put out in the Thantoungyee Cinchona plantation in the Sittang division. 27,000 of them were planted on the new clearing of 30 acres, reported in last years annual report Section 38, and 4,200 into blanks.

The following is a specification of plants put out.

Cinchona Succirubra seedlings	.. ..	16,190
do do cuttings	... ...	2,642
do Calasaya do	... ...	450
do Condamenia do	... ...	7,718
	Total	27,000

A recent counting showed the following success.

Cinchona Succirubra	... ...	13,362
do Calasaya	... ...	421
do Condamenia	... ...	6,992
	Total	20,775

A clearing of 10 acres only has been made during the year, which seems to be sufficient as a school for the Karen lads, who have been engaged to learn Cinchona planting under Takai. There are five apprentices at present. Cinchona seems to be appreciated by the population, and the introduction of the drug into the country is fairly started, and thus far success may be claimed. Several thousands of cuttings and seedlings have been distributed to the Karens, belonging to the Roman Catholic and Baptist Mission. They are reported to do well, and a further liberal distribution will be made during this year.

The expenditure on the plantation is heavy, and amounted during the year under review to Rs. 8,496. Fifteen trees planted in 1871 are annually measured and record is kept of their increase in height and girth. They average now 12 feet in height and 1 foot in girth. The plantation of *Plumado* has been made over to the villagers of that hamlet.

4. Conservancy works.

Thinning operations in the Prome and Tharrawaddie Divisions.

65. The plantation at *Prome* was severely thinned during the year, and in the Tharrawaddie division thinning operations were carried on in the Quaymakine, Myodwin and Boben plantations of 1866 at a cost of Rs. 141-12-0

Quaymakine	138- 8-0
Myodwin	0-12-0
Boben	2- 8-0

Myodwin small outlay explained

The small outlay in Myodwin and Boben is due to the work having been carried out by Mr. Oliver in person, assisted by his peons and watchers, who learned the work to be able to supervise it in future.

Difficult to supervise the cutting of creepers.

66. Orders have been issued to foresters and guards, to cut creepers wherever they meet them, but the instructions seem to have had but small effect, and it is difficult to supervise their being carried out.

Minor conservancy works at Magayee and Kyetpyoogan.

67. Minor Conservancy works such as weeding and pruning, cutting of creepers and opening out trees too numerous to report, are constantly carried on at Magayee and Kyetpyoogan, in the *Rangoon division.*

68. The 1873 plantation at Magayee the site of last year's fire is divided by a road, and to the North of this all trees, the terminal bud of which had been destroyed, were stumped, and the remaining trees carefully preserved The area south of the road was left to its own resources. The result is that the trees in this portion, the terminal bud of which had been destroyed, still present in many instances a stagheaded appearance or have died down to the ground sending forth shoots from the roots, but on the whole, the portion left to recover without assistance presents the more healthy appearance.

Measures adopted on the site of last years fire at Magayee.

In all other places where fire occured last year the trees which were severely damaged have been stumped, and all but the most healthy and strongest shoots have been removed. 106,800 trees were stumped or thinned out at Magayee, at a cost of Rs. 208 and 284,800 fresh shoots thinned and costing Rs. 406-0-0.

Cost of the operation.

69. As State reserves are formed, Conservancy works must take a much more prominent place in our Forest Administration, than they have done at present.

Increasing importance of conservancy operations.

b. Communication and Buildings.

70. In the *Tharrawaddie* division material has been collected for the reroofing of the rest houses, and a few small pathways have been constructed in the Mokkah Beeling reserve.

Reroofing the rest houses in the Tharrawaddie Division.

7. GIRDLING.

71. No girdling took place in any of our state reserves.

No girdling in any of the State reserves.

II. UNRESERVED FORESTS.

A. Constitution of.

72. There are two classes of unreserved forests in British Burma—Firstly, Forests declared Government forests under Section IV of the forest rules of 1865, and under the forest rules of 1875 published in British Burma Gazette Notification No. 49 dated 30th March 1876 ; and secondly, the entire unalienated forests and waste throughout the Province. The administration of both classes is vested in the Conservator of Forests.

Two classes of unreserved Forests in British Burma.

B. Relation of people to unreserved forests.

73. The people are at liberty to cut toungyahs in these forests wherever they feel inclined, as long as they observe the restriction laid upon them by the Forest rules of 1865, and do not cut their yahs in places where teak is growing. In all forests declared Government forests, the population are allowed to supply themselves for their own use as well as for trading purposes with any forest produce but those trees reserved under the Forest rules and subsequent notifications, and even for these, with the exception of Teak, free permits are granted to the inhabitants of the Forest area ,for domestic and agricultural use.

The people allowed to cut toungyas freely except where teak is growing. And to supply themselves with all except reserved woods, for which free permits are required.

In the unalienated Forest and waste, all comers may supply themselves free of any charges with any forest produce, teak excepted, whether for home or trade purposes.

In all other Forests every thing except teak is free.

Extension of permanent cultivation in Government as well as unalienated Forests, is in no way interfered with.

Extension of cultivation is permitted.

C. Area of unreserved forests.

74. The only changes in area and boundaries of the sum total of unreserved Forest, are effected by the sanction of new state reserves already treated of in a previous chapter, and by the steady increase of permanent cultivation.

Changes in area are effected by the formation of new reserves and by the increase of cultivation.

The relation however of the two classes has been altered by the Government Notification No. 49, dated the 30th of March 1876 declaring the following tracts in the Province Government Forests :—

Relation of the two classes altered.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 49.—*The 30th March* 1876.—In exercise of the powers conferred by Section 2 of Act VII. of 1865, the Chief Commissioner of British Burma is pleased to render the forest tracts specified in the Schedule hereto annexed, subject to the provisions of the said Act.

SCHEDULE.

Pegu Division.—I.—Forests west of the Irrawaddy river, and comprised within the following boundaries:—

North.—The frontier line.

East.—Irrawaddy river, from the frontier, and the Gnawun creek or Bassein river to the sea.

West and South.—The Arakan Yoma from the frontier to the water-shed of the Kyantalee *chyoung*, or south boundary of the Sandoway district, thence the Kyantalee south water-shed to the mouth of the Kyantalee *chyoung*, and the line of the sea-coast southward to the mouth of the Bassein river.

Tenasserim Division.—II.—Shwe-gyeen District, Lower Shwe-gyeen forests, comprised with-in the following boundaries:—

West.—A line drawn from Bawnee village to Kanyingnokdoh village between the Binedah and Yainway streams, and thence to the junction of the Koon and Woon streams.

North.—A line thence to Kyouk-kyee and eastward to the water-shed between the Sittang and Salween rivers.

East.—The Sittang and east water-shed.

South.—The Bawnee stream to its junction with the Sittang river, thence the Sittang river and south water-shed of the Kyoungpay stream to the Sittang east water-shed.

III.—Yoonzaleen District.—Upper Salween forests, embraced between the following boundaries:—

East.—The Salween river from the mouth of the Thoungyeen river to the mouth of the Pah *chyoung*.

North.—The Pah *chyoung* to its source

West.—The Salween west water-shed and Yoonzaleen east water-shed range.

South.—A line drawn west from the mouth of the Thoungyeen river to the Yoonzaleen water-shed.

IV.—The forests on the west face of the Donat range, and at the sources of the Houndraw river, their boundaries are as follows:—

West.—The Salween river east bank, from the mouth of the Thoung-yeen river to the Yimbine *chyoung*, a line drawn south-south-east to Weeway on the Hlinebway river, the Hlinebway river to its junction with the Houndraw river. Thence the Houndraw river as far as a line due west to the sources of the Nat *chyoung*. Thence the Attaran east water-shed to the Siamese frontier line.

South.—The Siamese frontier line.

East and North.—The Donat range to the mouth of the Thoungyeen river.

V.—The forests of the Lower Amherst District as enumerated below:—

(1)—The tract of country drained by the Wagroo and its tributaries.

(2)—The tract of country drained by the Kropee and its tributaries.

(3)—The tract of country drained by the Anheen and its tributaries.

(4)—The tract of country drained by the Lameing and its tributaries.
(5)—The tract of country drained by the Yea river and its tributaries above Yea village.

VI.—Forests of the Tavoy and Mergui Districts.
(1)—The tract of country drained by the Henzai and its affluents.
(2)—The tract of country drained by the Pra *chyoung* and its tributaries above Zadee village.
(3)—The tract of country drained by the Phawa *chyoung* and its tributaries.
(4)—The tract of country drained by the Tavoy river and its tributaries above the Choung-zouk *chyoung*.
(5)—The forests on the islands, known as the North, Middle, and South Moscows.
(6)—The forests on Tavoy Island.
(7)—The tract of country drained by the little Tenasserim and its tributaries above its junction with the Tenasserim river.
(8)—The tract of country drained by the Tenasserim river and its tributaries above Tenasserim Town.
(9)—The tract of country drained by the Laynaya *chyoung* and its tributaries above Laynaya village.
(10)—The forests on King's Island, and all the islands to the south belonging to the Mergui Archipelago, and including St. Mathew's and St. Luke's.
(11)—The forests on the west bank of, and drained by the Pah *choung* from Malewoon upwards.

D. Management and improvement of unreserved Forests.

Fire protection.

Fire conservancy in unreserved forests impossible.

75. Fire conservancy in unreserved forests is an impossibility ; they burn and must burn wherever the nature of the forest is dry.

General protection.

Protection of unreserved forests extremely limited.

76. The protection of unreserved forests was till now extremely limited. Doubtless the forest rules of 1865, provided for the protection of teak throughout the country and Notification No. 32 of 1873, for the reservation of Thitkadoe and Thitka ; but every thing else was left to the tender mercies of the population and traders, and our establishment was by far too small to enforce even the existing rules.

Causes which rendered fresh measures necessary. Notification No. 1 of 1st January 1876 drawn up and sanctioned.

The large number of logs of inferior trees brought to central markets, and, more than that, the rapid disappearance of cutch tracts, became more and more evident and it was found necessary to take steps to prevent unnecessary destruction. Consequently, the following Notification was drawn up by a Committee formed by the Inspector General of Forests, the Secretary to the Chief Commissioner, the Deputy Commissioner of Rangoon and myself, submitted to the Government Advocate and sanctioned by the Chief Commissioner.

BRITISH BURMA.

REVENUE DEPARTMENT.

NOTIFICATION

No. 1.

Dated Rangoon, the 1st January 1876.

Rules for the reservation of certain woods.

77. The following Notification is issued by order of the Chief Commissioner of British Burma, under the provisions of Rule XII. of Rules for the administration of Forests in British Burma, dated the 2nd August 1865:—

1. Within the Government Forests no trees of the kinds undermentioned, if below twelve feet in girth, measured at six feet from the ground, may be felled,

cut, tapped, or otherwise used without a permit granted by an officer duly authorized in that behalf :—

(1)—Thingan.	(7)—Engyin.
(2)—Thitsee	(8)—Theya.
(3)—Kokoh.	(9)—Eng.
(4)—Pynkadoe	(10)—Pymmah.
(5)—Padouk.	(11)—Kanyin.
(6)—Anan	(12)—Shah.

The Chief Commissioner reserves to himself the right of modifying this list from time to time, or adding other kinds of trees thereto.

2. The permit to be granted under clause 1 shall specify—

(1)—the maximum number of trees to be felled under it;
(2)—the time for which it holds good;
(3)—the local limits of the forest to which it applies;
(4)—the circumstances under which it may be cancelled, and the effect of cancellation.

Such permit shall not be transferable.

3. There will be two classes of permits—free permits, and trade permits. Free permits will be granted at the discretion of the officer granting the permit for all timber or other produce, which is used for the domestic or agricultural requirements of the inhabitants of villages in the vicinity of the Forests, and no payment of any kind shall be levied for timber used, or any forest produce cut or removed under free permits. Trade permits will be granted for trees felled and timber removed for the purposes of trade permits, payments at the following rates shall be made :—

For every tree of Eng and Pymmah the sum of four annas shall be paid before the tree is felled ; and for all timber of Eng and Pymmah, the sum of two rupees per ton of cubic feet shall be paid in addition, before such timber is permitted to pass any timber stations which may have been notified in the *British Burma Gazette*, by the Conservator of Forests.

For every tree of the other ten kinds specified in clause 1, the sum of eight annas shall be paid before the tree is felled, and for all timber of such kinds the sum of four rupees and eight annas per ton of fifty cubic feet shall be paid in addition, before such timber is permitted to pass any timber stations which may have been notified, in the *British Burma Gazette*, by the Conservator of Forests.

4. For the extraction of resin, *thitsee*, or wood-oil, or for the making of cutch and charcoal, payment shall be made under such rules and at such rates as the Chief Commissioner may from time to time direct.

5. This notification shall be held to apply to all trees of the kinds specified in clause 1 which may be felled, cut, tapped or otherwise used after the date of the present notification. For the removal of timber trees felled before that date free permits will be granted, and such timber shall not be liable to any payment under this notification, provided it is passed at a timber station before the 1st January 1877, after which date it will be liable to the payments prescribed in clause 3.

6. Persons committing a breach of the provisions of this notification will be prosecuted under the Forest Rules.

By order,

(Sd.) C. W. STREET, MAJOR,

Officiating Secretary.

Endeavours to procure co-operation of Civil Officers.

78. With a view of insuring the cordial assistance of the civil authorities, the following rules were drawn up by me, for the working of the reservation of the above mentioned trees, and sanctioned by the Chief Commissioner. These rules it is hoped will enhance the interest civil officers take in the forests of their

district and make them active participators in their conservancy. The Deputy Commissioner of Prome has already evinced an active interest in the reservation of cutch.

REVENUE DEPARTMENT.

NOTIFICATION.

79.—No. 18.—*The 16th February* 1876.—The following rules for the issue of permits under Revenue Department notification No. 1, dated the 1st January 1876, having been approved by the Chief Commissioner, are published for general information:— Rules for the issue of permits.

Rules for the issue of permits under Notification 1, *of* 1*st January* 1876.

I.—In demarcated State reserves—

The Forest department has the right to prevent the cutting of any forest produce whatsoever, and can make their own arrangements with regard to the method of sale, the prices to be charged, or the issue of free permits.

II.—In all other forests included within the boundaries of Government forests as defined by the Forest Rules of 1865—

(1)—Free permits for the timber specified in the notification will be granted by the Deputy Commissioners or such Officers as they may appoint for that purpose not below the rank of Extra Assistant Commissioner. These permits will be issued in form No. A., original will be made over to the petitioner, duplicate sent to the Divisional Forest Officer, and triplicate kept in the District office. The original has to be shown to any Government official at his demand. Forest subordinates discovering cases of felling or extracting protected timber without permit must report the case to the Divisional Officer, who will forward the case to the Civil Officer for disposal. Free permits must be returned after the expiration of the the time for which they were granted.

(2)—Trade permits are to be issued in Form B. They may be granted either by the District Officer, or by the Divisional Forest Officer. The original is to be made over to the permit-holder, duplicate to be sent by the District Officer to the Forest Officer, or *vice versâ*. The original permit has to be presented to any Government official on demand. Forest Officers, discovering illicit girdling must report the fact to their Divisional Officers who will inform the District Officer, with whom the prosecution will rest Original permits must be returned on expiration of the time for which they were granted.

(3)—Free trading permits for the removal of timber of the reserved kinds felled previously to 1st of January 1876 may be granted either by the District or Divisional Forest Officer in Form C. Original will be made over to permit-holder, duplicate sent by the District Officer to the Forest Officer, or *vice versâ*, and triplicate filed in the Office issuing the permit. None of these permits will have force after 1st January 1877.

(4)—The revenue to be levied at revenue stations will be collected by the Forest Department. At these stations free trading permits granted must be registered by the permit-holder, and timber passed under them will be entered against the number specified therein. Timber not covered by a duly registered free permit, will be liable to duty.

(5)—Permits for the extraction of resin, wood-oil, or *thitsee*, or the making of cutch and charcoal, will be granted by the Deputy Commissioners, either at rates to be fixed at their discretion or they may sell annual permits for the monopoly of the extraction of such products within well-defined areas by public auction. Persons extracting such produce illicitly must be reported by the Forest Officers ; but the prosecution rests with the District Authorities.

(6)—All revenue collected under these heads by the District Officers has to be credited to Forests, and a monthly abstract of the revenue must be forwarded to the office of Conservator of Forests.

Artificial Toungya cultivation.

Artificial teak cultivation outside the reserves.

80. Outside the reserves an area of 203⅝ acres was cultivated with 104,551 teak and 11,914 Maizallee, at a cost of Rs. 971-13-3 as exhibited in detailed statement below.

Forest or district.	Tay or village cultivating.	No. of yah.	Area acres.		No. of plants counted. Teak.	Maizallee	Total.	Average of plants per acre.	Cost. Cultivation.		
Thoungzai district ...	Sorcay Pala ...	6	18	15-16	11,620	2,027	13,647	728	116	13	...
(Nga loowa choung) ...											
Kadin Beeling district	Sorcay Tetto and Tha										
(Mya choung) ...	Doon Oung ...	4	4		2,448	69	2,517	629	20	15	6
Mokka Forest (Shoukpen choung) ...	Sorcay Oung Bway...	13	37¾		14,211	3,131	17,342	459	144	7	9
Minhla Forests	Sorcay Shwe Zin ...	21	47⅞		24,123	2,089	26,212	553	218	6	3
	Sorcay Pahage ...	3	5	11-16	1,742	269	2,011	353	16	12	...
	Sorcay Nga Aye ...	12	31	5-16	11,464	1 095	12,569	401	105	3	..
		36	84⅜		37,329	3,453	40,782	483	340	5	3
Myung choung Boben ...	Sorcay Pan Yea ...	8	21	3-16	15,238	1,394	16,632	817	138	9	3
(Kyoukpyoo choung) ..	do	4	15¼		8,853	...	8,853	580	73	5	6
Toungnyo district ...	Sorcays	7	15¼		10,268	1,085	11 353	744	94	9	6
Shoaylay district ...	do	5	11¼		4,384	755	5,139	456	42	11	6
	Total B.	81	203⅝		104,551	11,914	116,465	572	971	13	3

Arrangements made with Sorcays not altogether successful.

81. Some of the Sorcays, as was anticipated and noted in last years report, refused to carry out the arrangements agreed upon between themselves and Major Seaton; others cut their yahs but either would or could not burn them, the result being that out of some 50 yahs promised to be cut only 22 have been planted.

The Sorcays of the Karen tays, on the Khaboung, promised to plant teak on toungyas but only 4 fulfilled their promises, and even their work may be set down as a failure. 950 plants was the total number the department had to pay for.

Many Karens came forward again, wishing to plant teak in their toungyahs, but admirably as this cultivation is adapted as an assistance to the gradual improvement of fire protected state reserves, it is not practicable to form small scattered blocks of pure teak, to protect which we have not sufficient means.

82. Under instructions from the Inspector General of Forests I asked for, and obtained sanction to discontinue Teak Toungya cultivation in unreserved forests, thus forestalling the orders contained in Government of India Resolution on last year's report Paras. 6 and 7.

Discontinuance of teak toungya cultivation in unreversed forests.

Natural Cultivation.

83. It will be impracticable to assist natural cultivation to any great extent in forests which are exposed to annual conflagration, but at the same time it is advisable to adhere to the suggestions made under the same heading for reserved forests in all such places where it is intended to form a reserve, or where it is likely that a teak reserve will be selected. Nothing has as yet ever been done to assist natural reproduction of teak, cutch, or any other valuable tree.

Fires prevent assistance being given to natural cultivation.

Forest conservancy works.

84. Nothing has to be reported under this head with the exception of the clearing of rank growth of the toungyah plantation of 1873-74, in the Tharrawaddie division.

Clearing of rank growth in the Tharrawaddie division.

438¾ acres were cleared at a cost of Rs. 1,096 or 2-8 per acre. In the Pegu, Prome and Tharrawaddie divisions, creepers were cut in a desultory way, when met with, during the marches of Forest Officers and subordinates.

Creepers cut in Pegu, Prome and Tharrawaddie divisions.

Communication and Buildings.

85. In the *Prome division* Overseer DeCosta has been engaged in blasting operations in the Hlowa Choung. On the west of the Irrawaddy he reported the removal of 43,075 cubic feet of rock at a cost of Rs. 1,133 0 0, and with an expenditure of 129 pounds of blasting powder.

Blasting operations in the Hlowa choung in the Prome division.

86. In the Beeling stream (Tharrawaddie Division) a large obstruction had formed, about 2 miles below the Irrawaddy Valley State Railway. The obstruction above 3 miles long, was formed by the sinking of Kanyin and Eng logs belonging to private parties, in the slack water caused by the back water from the Irrawaddy meeting the hill drainage. The river was cleared at a cost of Rs. 766-9-6. Part of this expenditure will if possible be recovered from the owners of the timber and our own contractors.

Obstruction in the Beeling stream cleared. Other obstructions being cleared away.

87. Other obstructions have formed in Shoaylay and Toungnyo streams and are being cleared away; obstructions caused by fisheries in the Rangoon division in the Kadot, Binedah and Zamayee choungs have been ordered to be removed.

Obstacles in the Giek choung Sitting division removed at the contractors expense.

88. In the Sittang division the Contractor of the Khaboung forests has blasted at his own expense, four large rocks obstructing the passage of the timber in the Giek Choung.

Girdling.

89. In the Tharrawaddie division, girdling operations were carried on during April and May and 3,576 trees were girdled; 1,944 of them in the Shoaylay, and 1,632 in the Toungnyo forest. The cost of the work was Rs. 833-8-5, and was revised by Mr. Nepean.

Girdling operations in the Tharrawaddie division.

III. Forests in which the right to extract teak is leased to Permit holders.

90. The following is a list of unexpired leases with dates of expiration.

List of unexpired leases.

Sittang Division { Koon, Eintoon and Toonkan } Burma Company Limited 1st December 1876.

Salween Division, Upper Salween

I. Division, Moung Shoay Oo, 1st December 1877.

II. Division, Kharwar Htan, 1st December 1877.

Attaran Leases.

Name of Forests.	Lease holder.	Date of expiration.
Alantayah No. 15 Hobday's map.	Shaik Mahomed ...	1st October 1896.
do do 18 „ ...	Shaik Abdoola ...	do
do do 29 „ ...	do	do
Kanzouk do 30 „ ...	Shaik Mahomed ...	do
Ma Oo do 31 „ ...	do	do
do do 32 „ ...	do	do
do do 33 „ ...	do	do
do do 34 „ ...	do	do
do do 44 „ ...	Shaik Abdoola ...	do
Kannee do 54 „ ...	Shaik Mahomed ...	do
Kroon Kawoon 7 „ ...	Moung Doon Khan ...	do
Pahbyah do 10 „ ...	Nga See ...	do
do part of 18 „ ...	Mrs. Darwood ...	do
Goojee do 35 „ ...	Oozoo ...	do
do do 51 „ ...	Mr. E. M. Pascal ...	do
Mee Gwa do 50 „ ...	B. B. Tg. Co. Limited...	do
Kyoon choung 52 „ ...	do	do
do do 53 „ ...	Mrs. Darwood ...	do
Pandau Tributaries of the Kroon	Kothorraway & Koh Panhton	21st March 1898.
Kawoon No. 8 „ ...	Mrs. E. Rushbrook ...	1st October 1896.
Nyoung Ptaing 11 „ ...	do	do
Toung Byo No. 16 „ ...	do	do

Repeated renewals of the leases of permit holders to extract dead and undersized wood.

91. Under the terms of agreement, the permit holders are allowed only to extract timber of a certain size 7' 6" circumference, but, to enable them to extract the dead under-sized timber, they were allowed to do so by the terms of their leases till the 1st January 1869. Government extended the privilege twice, once till 1870 and again till 1872.

The privilege not made use of.

Departmental working of the Thoungyeen forest proved that a profit could be made on such timber.

However even a few years ago Moulmein was not a good market for inferior timber, and the duty of Rs. 1-6 for each inferior log was moreover out of proportion to their value, most of the Contractors made therefore no use of the privilege granted to them, and only came forward to claim an extension of the privilege, when the Forest Department had proved by the working of the Thoungyeen refuse timber, that a profit could be made out of such timber, and after they had been advised that we would work the dead undersized timber in their Forests. After consulting the Government advocate I refused their claim.

Their claim to renewal refused. Permit holders liable to ejection for cutting undersized timber.

92. The only protection granted to these forests is the condition, that Permit holders are subject to ejection, if they fell timber below 7' 6" girth at 6' from the ground. It is a matter of regret that in spite of the strong recommendation made by the Government of India, in their letter 265 F dated 13th July 1866, a condition enforcing the planting up of 5 acres every 5 years, was not entered in the Permit.

An action brought against a Government contractor by the Burma Co. failed as it appeared based on incorrect information.

93. One of the Permit holders, the Burma Company filed a suit against a Government Contractor Ramaswamy Rajah, for illegal extraction of timber from their Forest tract No. 18 on the Dalley Choung. The case was tried at length and the defendant acquitted, and the accusation was proved to have been based upon incorrect information.

IV. Yield and Working of Forests.

Introduction.

94. This chapter treats of such produce from which Government derives a profit, whether extracted from forests enumerated under headings I, II, or III., State reserves, unreserved forests and leased forests; it discusses all works directly or indirectly connected with its extraction, transport, salvage, storage, conversion and disposal, and shows the cost of the actual handling of the produce, excluding all other charges but those under A. Working expenses. The only income is as yet derived from timber, and chiefly from teak timber. All other woods are as yet comprised in the one expression "timber other than teak."

Trees as soon as they have been either girdled or felled, cease to be a productive unit of the forests, and become timber, and as such, an article of trade. They are of no further importance to Forest conservancy.

Extraction of teak timber from state reserves and unreserved forests.

Timber is now universally extracted departmentally.

95. Throughout the province teak timber from these classes of Forests, is now extracted by departmental contractors, and is taken by them either into deep water creeks, where it is formed into rafts, or is on indent delivered at places near the floating choungs.

No. of teak logs extracted from the Prome division.

96. During the year the following number of teak logs has been extracted from the *Prome division* forests.

Nawing Forests	965
Padashin	102
Okpho	42
Mindoon	1049

Cost.

The cost of extracting them (2158 logs) amounted to Rs. 28,989-4.

Extraction from the Tharrawaddie division.

In the Tharrawaddie division 9218 logs were extracted at a cost of Rs. 119,834 This outturn has been arrived at from the different forests in the division, in the following proportion.

Shoaylay	1,156
Shaboung	926
Toungnyo	1,338
Mimboo	937
Boben	1,791
Toung	808
Htoo	722
Minhla	819
Mokkha	169
Beeling	279
Thoungzai	273

Permission given the Railway authorities to convert small pieces of teak into sleepers.

97. Permission was also given to the Railway department, to enter the forests and convert all refuse teak below 12 feet in length, into sleepers. They have extracted 2040 sleepers aggregating 3060 cubic feet. 2533 neaped logs were counted in the different streams of the division, at the end of the season.

Extraction of teak in the Rangoon division.

98. In the Rangoon division, 340 logs were extracted from the Pounglin and Oakkan forests, 1413 from the Zamayee and Pegu Choungs making a total of 1753 logs extracted at a cost of Rs. 27,539-1-6. In addition 156 logs were extracted from the Kawleya forests and brought on to the road at Gwaybenkoo and Binedah choungs, at an expense of Rs. 1393-9-0.

In the Sittang division.

99. In the *Sittang division*, 5677 logs and 1462 small pieces were extracted from the Kannee, Myolah and other forests at a cost of Rs. 83000-9-0 The short pieces were the result of a wasteful working of the forests, when held by permit holders.

In the Salween division.

100. In the *Salween Division* the Government Contractors extracted 7788 logs and 7564 pieces of teak, distributed over the different forests as follows:

Beeling	130
Yoonzaleen	112
Domdamee	3,072
III Division Upper Salween	292
Thoungyeen	7,191
Attaran	1,633
Hlineboay	1,886
Lower Salween	1,006
Phapoon	30

From the Thoungyeen Koh Sit Poh, and after his death his sons, extracted 7820 Loozars and Doogies, and 761 small pieces at a cost of Rs. 81760-2-8, and pushed this timber down the Thoongyeen Choung by Elephants, at an additional expense of 22,515-0-0. From the Hlineboay, Contrator Syah Pahpoo brought out 1886 short pieces, and Contractor Ramaswamy Rajah 1000 pieces timber of the same description from the Kanyin Choung in the lower Houndraw. 1016 pieces were extracted by Syah Phapoo from the Lower Salween, Pahan, and 1633 from the Attaran. The upper Domdamee yielded 612 logs and 2460 short pieces.

Failure of the contract for the Beeling forest

101. The Contract for the Beeling turned out a failure. The Contractor Moung Kan obtained the assistance of villagers and their Elephants and worked 530 logs into the stream, and brought 130 of them into Moulmain He received immediate payment but never paid his men, who consequently refused to work.

The man was closely watched and having been proved dishonest, the Deputy Conservator annulled his contract and confiscated his timber, which is now being brought down by men who have the earnings of a whole year depending on its safe arrival. 77 logs were taken out of the Yoonzaleen and 306 out of the Upper Salween III Division. 10,080 logs were neaped in the Salween division at the end of the year; most of them have since arrived at the Kyodan rope Station, promising a good outturn for 1876-77.

Rafting of Government teak timber.

Rafting of Government teak timber

102. Of the timber extracted from the Prome forests, 1860 logs were rafted down to Rangoon depôt. The balance 298, was taken delivery of by the Executive Engineer 4th Railway division. From the Tharrawaddie division 8846 logs were floated in the central depot, costing Rs. 13269. 347 logs averaging 20,317 cubic feet were taken delivery on the Railway line, and 25 logs containing 1230 cubic feet at Poungday. From the Rangoon division 1,613 logs were brought down the Hline and Pegu choungs to Rangoon, costing Rs. 2,016-4-0. 156 were taken delivery of on the floating choung. 5,858 logs were rafted to Rangoon from the *Sittang division* at an outlay of Rs. 21,967-8-0. 12,79 were kept at Tonghoo. At Kadoe and Moulmein, rafts arrived containing the following government teak timber.

	Logs.	Pieces.
Thoungyeen	6,612	579
Hlineboay	"	1,886
Lower Salween	"	1,006
Attaran	"	1,633
Upper Domdamee	612	2,460
Beeling	130	"
Yoonzaleen	77	"
Salween III Division	292	"
	7,723	7,564

The cost of rafting and floating the Thoungyeen timber, amounts to Rs. 24,982; as regards the timber from the other forests the charge of extracting and transport are not divisible. Under the existing contracts a certain proportion, ($\frac{2}{3}$ respectively $\frac{3}{4}$) of the sale value, which of course is fluctuating is paid to the contractor.

Extraction of woods of other kinds by Government Agency.

Extraction of other timber from the Tharrawaddie division for the Irrawaddie State Railway

103. 17,131 Pynkadoe logs 7 and 14 feet in length, and 650 cut sleepers, have been brought out of the forests in the Tharrawaddie division at a cost of Rs. 71,194; and in the Rangoon division 6,519 logs, of the same description were extracted for Rs. 40,524. All this timber was taken over at depôts along the Irrawaddy State Railway line.

From the Sittang division.

104. In the *Sittang* Division 1,444 Thitka and Thitkadoe logs were brought from the forests as well as 65 Padouk logs, 41 of which were squared. The Thitka and Thitkadoe timber was all rafted to Rangoon, and the Padouk squares were taken on the top of the teak rafts. Twenty four Padouk logs were as an experiment formed into a raft buoyed up by bamboos. They arrived safely at a cost of Rs. 263-8-0 or nearly Rs. 11-0-0 for rafting each log, to which has to be added Rs. 8 for extraction. In addition 20 logs of Thitka were sent to Rangoon. These fancy woods are being seasoned at Rangoon, before it is attempted to bring them into market.

From the Salween division.

105. Syah Pahpoo contractor on the *Salween*, brought 96 logs of Padouk into Kadoe, but reports 104 as neaped; he brought also 98 logs of Thitka, and another contractor Ko Hpoo, arrived with 159 logs. Thingan was not extracted during the year, and of pines only 16 logs came to hand. However large numbers are in transit.

Superstition preventing the Karens from working.

106. There is a curious difficulty in obtaining contractors for this timber. All the Karens (so it is said) who cut the timber died of the epidemic raging in the Salween forests last year and a superstition has sprung up that this was due to their cutting pine trees. Such difficulties can hardly be imagined by people who do not know the Karens, but will be understood if it is considered that these men abandon fields, which have cost them weeks of labour, because a bear runs across them in a certain direction, or if a small species of hawk sits upon one of the dead trees on the toungyah and cries. However the Karens have a great dread of outsiders entering their forests to compete with them in forest work, and by this means we hope to be able to induce them to do some work.

In the South Tenasserim division.

107. In the South Tenasserim division, a number of Pynkadoe logs have been extracted, how many I am unable to state, as we took delivery in converted form as sleepers. 7238 sleepers were delivered at Rs. 140-0-0 per hundred at Rangoon.

Drift timber operations.

Salvage operations on the Irrawaddie and Sittang

108. On the Irrawaddy between Bassein and Rangoon, 1080 logs of timber were salved by the Rangoon division and depôt officer. Of these 961 logs were claimed, and made over to their owners on payment of salvage rates. 119 logs remain property of government and were as such brought on to the depôt book. On the Sittang 3014 logs were salved by the Sittang division, of which 1687 were made over to claimants at Toungoo, and 507 at Shwe-gyeen, leaving a balance of 468 logs the property of government; of these again 146 were credited to contractors and are included in the timber rafted to Rangoon; 101 were taken over at Toungoo, 109 at Shwe-gyeen, and 112 sent to the Rangoon depot. Among the logs salved were 342 Thitka logs, but only 27 of these remained unclaimed. In the Rangoon division 47 logs were salved, the whole number being returned to claimants.

On the Salween, the number of logs salved amounted to 4477, of which 1055 only were made over to claimants, leaving a balance of 3422 to Government. The total of logs salved throughout the province amounts to 9670 logs of which 5145 are Government property. The amount expended on salvage is Rs. 8663-12

The sea shore salvage of the year amounts to 1558 logs salved at a cost of Rs. 15,939-7-0, of these sums however Rs. 12,473-12-0 have been refunded by private owners. Favoured by luck, but partly also in consequence of increased vigilance, the number of logs salved, during the year has largely increased.

The statements of 1874-75 show 4028 logs as salved of which 2719 were delivered to claimants, leaving government in the possession of 1309 logs, whereas during the year 9670 logs were salved, of which 5145 remained unclaimed. The seashore salvage has increased from 511 logs during 1874-75, to 1558 logs during 1875-76.

System of salvage imperfect and requiring reorganisation.

109. I am however of opinion that a large number of logs are still salved by timber thieves, and have made distinct proposals for the management and checking of timber transport and salvage, on the Irrawaddie and Salween. My proposals. including the employment of a steam launch and timber police boats on each of the rivers, have been sanctioned and will be put into execution, as soon as feasible.

Stealing drift timber.

110. One very flagrant case of stealing drift timber was discovered, and the offenders were successfully prosecuted. A Burman Moung Myah Pho personated a Forest Ranger, and in that capacity sold Government drift timber in villages near Pegu. Armed with a forged document appointing him, and assisted by another man Moung Shoay Thoung, he acted in such an undisguised manner that our subordinate establishment as well as the public, were utterly deceived. He had handbills printed at Rangoon, and made the forest subordinate take them about and even went so far as to fine our old Forest ranger Moung Tok Poh. Moung Tok Poh in his periodical report mentioned that he thought timber sold too cheaply at Pegu, on which information Mr. Strettell, knowing that no sales were held at Pegu, hastened there and had Moung Myah Pho arrested. Prosecuted under section 403 and 170 Indian Penal Code, he was sentenced on the 1st charge to 2 years rigorous imprisonment and a fine of Rs. 500, or a further six months imprisonment, and to one year rigorous imprisonment on the 2nd charge. Moung Shway Thoung was sentenced to 3 months rigorous imprisonment for being in illegal possession of a teak log. Both Moung Myah Pho and Moung Shway Thoung were then prosecuted for cheating Moung Tok Poh, our ranger, and condemned to suffer respectively 6 and 4 months rigorous imprisonment. All the timber sold by them was recovered.

The following is a list of cases regarding theft of timber in transit.

Forest Cases.

Division.	Forest or locality where offence occurred.	Nature of offence.	No. of persons.	Punishment inflicted.
Prome.			Nil.	
Tharrawaddie.	Shoaylay choung obstruction Myetnatha.	Dishonest misappropriation of moveable property.	1	Fined Rs. 50 and ordered to pay court expenses Rs. 10.
		Criminal misappropriation of a Government teak log.	1	Fined Rs. 30.
Rangoon.	Sittang River Winpadaw.	Being in illegal possession of a teak log.	2	Fine of Rs. 50 and 3 months rigorous imprisonment.
	Pegu.	Cheating, misappropriation of certain logs of Government timber. &c.&c.	2	Sentence to 3½ years rigorous imprisonment and a fine of Rs. 500 in default a further period of 6 months for the 1st, and 4 months for the 2nd Defendant.

Forest Cases (Continued.)

Division.	Forest or locality where offence occurred.	Nature of offence.	No. of persons.	Punishment inflicted.
Sittang.		Nill.		
Salween.	Salween Division.	Breach of Rule 27 page 488 B. B. hand book. Taking forceable possession of 2 rafts teak timber salved by people of Kawsain island.	1	Fined Rs. 25.
	ditto	Salving and selling river drift timber.	1	Pending.
	ditto	Salving and selling teak timber without marks.	1	Dismissed.

Teak timber worked under permit.

111. In the Prome division 727 logs were removed by ex-permit holders. They were allowed this privilege, solely on the ground that the same concession had been made in the previous year, to other late permit holders. They have now one and all had the same favour shown to them, and there is no need to recognize any further claim, on any ground whatsoever. The Burmah Company worked under the same concession 220 logs from Eingtoon and Toonkhan forests. 249 logs were brought out from the Moong and Youkthawah forests paying Rs. 10 per ton or Rupees 1519. Removal of timber under permi in the Prome division.

112. In the Salween division, the following logs and pieces were extracted by permit holders from the different forests. In the Salween division.

	Extracted.		Arrived at Kadoe.		Remarks.
	Logs.	Pieces.	Logs.	Pieces.	
Upper Salween I ...	314	...	1291	73	
do do II ...	984	91			
Meeboay Mhineglay ...	...	3733	...	...	
Koloon ...	...	1822	...	5207	
Attaran ...	17	1274	...	...	
Mittigate Kodoogway...	221	...	221	110	
Pandaw ...	...	6964	...	6964	
Total...	1536	13894	1512	12354	

The amount of Royalty paid on these logs and pieces throughout the province amounts to Rs. 6857.

Free grants of Teak timber.

113. Free grants were made during the year to the amount of 125 logs valued at Rs. 1500, showing a decrease of 521 logs against previous year. In former years, it was customary to give grants of logs often of considerable value at Thoungzai, Prome, Henzadah, and places similarly situated in rivers and floating creeks. This is not within the provisions of section 4 of Schedule IV of the Forest rules, which provides only for the grant of standing teak trees, to parties residing near the forests, and with the sanction of the Chief Commissioner the practice has, and very properly so, to a great extent been discontinued. Free grants.

114. The following table exhibits the total outturn of British Burma forests side by side for 1875-76 and 1874-75. Total outturn of British Burma forests.

Teak.	1875-76.			1874-75.	
	Logs.	Sleepers.	Tons.	Logs.	Tons.
Government timber brought to Central depots by Government contractors ...					
Rangoon	17194	2044	17802·3	11504	11813·8
Moulmein	15352	...	10966·5		
Delivered by contractors in the province..	3230	...	2887·0		
Obtained from the river salvage and miscellaneous sources	7462	477	7982·9	*1443	1414·2
Obtained from seashore salvage ...	1558	...	801·8	511	500·8
Total Government Teak ...	44796	2521	40440·5	13458	13728·8
Worked out by permit holders ...	10343	...	6094	26384	21517·0
Free grants	125	...	62·5	646	323·0
Total Teak...	55264	2521	46597·0	40488	35568·8

* Note.—In last year's table Para. 61, this was erroneously shown as 4162 logs of 4078 tons; Of these however 2,719 logs containing 2664·6 tons were claimed and also entered under timber worked by permit holders.

** Outturn of woods other than teak.*

	1875-76.				1874-75.	
	Logs.	Pieces.	Sleepers.	Tons.	Logs and Sleepers.	Tons.
Brought to Central depôts by Government Contractors..						
Rangoon ...	1630	...	7888	1606·4	4709	4539
Moulmein ...	389	...		421		
Delivered by Government Contractors in the Province...	...	23650	650	9716	4179	125·3
Drift confiscated and waif ...	...	...	364	10·9	...	...
Total other woods...	2019	23650	8902	11754·1	8888	4664·3

Note.—This includes only timber worked for or by the Forest department and not the large number of Sleepers or the large quantities of timber obtained by the Railway department directly from contractors.

These figures show an increase of 19,842 tons of teak timber brought into depôt by Government Contractors against 1874-75, and of 13,108·9 tons against 1873-74, the outturn of which year was largely augmented by the confiscation of Burmah Company timber. The total outturn of Government teak from all sources has increased 26711·7 tons, but only 6094 tons having been extracted by permit holders, the gross outturn of British Burma teak is but 11,028·2 tons, in excess of last years yield. The increase of 7089·8 tons in the outturn of woods of other kinds is only due to the delivery of a large number of Pynkadoe logs to the Railway department. The outturn in Thitka and Thitkadoe from Government forests has fallen off, and the trade in these woods has shifted again into the hands of private parties, who supply themselves from unreserved forests. However it must relapse to Government, in consequence of the Notification declaring the tracts west of the Irrawaddie, Government Forests.

Depôt work and Conversion. Rangoon Depôt.

115. The balance of timber on hand in this depôt on the 1st of April 1875 was. Transactions of the Rangoon depôt.

Logs.		Crooks.	Sleepers.	Tons.
I class.	II class.			
1568	10703	599	1489	13824

Woods of other kinds.

Logs.	Sleepers.	Tons.
994	2656	1081

The following timber was landed during the year at a cost of Rs. 7567-8.

Logs.		Crooks.	Sleepers.	Tons.
I class.	II class.			
3068	17112	...	...	17958

Woods of other kinds.

Logs.	Sleepers.	Tons.
1736	...	1427

The following timber was disposed of during the year.

Logs.		Crooks	Sleepers.	Tons.
I class.	II class.			
4016	17549	600	1445	21056

Woods of other kinds

Logs.	Sleepers.	Tons.
1567	61	1421

Leaving a balance of Teak.

Logs.		Crooks.	Sleepers.	Tons.
I class.	II class.			
637	10212	...	80	10726

Woods of other kinds.

Logs.	Sleepers.	Tons.
1163	2595	1087

Some of the timber in the depôt was several years old and began to deteriorate.

Sale by public auction.

116. The selections for sales by public auction were made in such a manner as to clear the depôt as much as possible of old and inferior timber and sales were pushed on as long as the market remained rising or steady, independently of the balance of timber in the depôt. If I could have sold all wood in the depôt at remunerative prices I should have done so, in preference to keeping a stock of deteriorating material however small.

Depôt wood imperfectly marked.

117. It was observed that the logs in the depôt were but scantily marked with the Forest marks, and orders were issued to divisional officers to see this remedied in future.

Presence of long and crooked pieces of timber.

118. Dr. Brandis when inspecting the depôt, drew my attention to the large proportion of long timber which was not perfectly straight, and which had been brought out by Contractors in consequence of the increased rates for additional length of logs. I made enquiries and found, as expected, that it would have been more profitable for the department to bring out such logs in the shape of 2 small ones. Orders have consequently been issued, that increased rates are only to be paid for such length as will yield a square. If logs have a bend or defect in the middle, they will in future be paid for as two small logs measured from the angle or defect.

Conversion of logs into scantling.

119. 300 logs of second class teak timber aggregating 335 tons, were cut up into 5,480 sleepers and scantling, at a cost of Rs. 3,716-14-6 yielding 299 tons of converted material, 164 tons sleepers and 135 tons of scantling. 280 logs containing 254 tons were cut up into 1 inch planks and scantling, yielding 192 tons of converted material, of which 50 tons were first class planks. The cost of this conversion was Rupees 2,742-6-4. 140 logs containing 120 tons of "Woods of other kinds," were cut up into scantling of sorts, at a cost of Rs. 1,017-5-4, yielding 80 tons of converted timber.

Cost of conversion.

The average cost of conversion was Rs. 13-1-3 per ton including 2-1-10 per ton for supervision and transport to and from the saw mill.

Moulmein depôt Kadoe and Battery Point.

Transactions of the Kadoe timber depôt.

120. The balance of timber in hand at the beginning of the year was.

Logs.		Crooks.	Sleepers	Tons.
I class.	II class.			
258	1189	...	...	1302·15

Woods of other kinds.

Logs.	Sleepers.	Tons.
924	...	831·30

During the year the following timber was received.

				Logs.
Teak.	Worked out by Contractors	15,322		
	Logs worked and lying at Pahpoon	30		
	Drift Timber salved	4,477		
				19,829
Woods of other kinds				389
			Total ...	20,218
The disposals amounted to Teak and other woods		15,339		
Drift Timber		3,513		
				18,852
Leaving a balance of				3,737

Conversion of logs into scantlings.

120 *(a)*. During the year 7,166 logs and 7,709 pieces aggregating 10,303·9 tons were converted into 109,684 Railway sleepers and scantling at a cost of Rs. 1,06,669-8-10. 30,837 of these were prepared between July and December and of the other 78,847 were ordered only in the end of January and delivery was completed, by the 31st March. They were converted, shipped, and made over at the rate of 1,000 per day. 60 logs were squared for the Mathematical Instrument Department at Calcutta at a cost of Rs. 3,598, yielding 40 tons 25 cubic feet of converted material.

Disposals in depôts.

Disposal of timber by Auction Sale in the Rangoon depôt.

120 *(b)*. At the Rangoon depôt ten public auctions were held during the year disposing of 20,483 logs containing 17,911 tons of teak timber giving an average of Rs. 38-12-3 per ton. 1,691 teak logs 1,822 tons were sold on indent for Rs. 75,724-6-9 or at an average of Rs. 41-9 per ton. 50 tons of teak planks were sold to Messrs Gillanders Arbuthnot & Co. at Calcutta for Rs 6,976-13-3. This was done with a view of testing the Calcutta Market. 142 tons of scantling the residue of these planks was sold for Rupees 8,762-9-4. The expenses of this operation in addition to cost of conversion amounted to Rs. 1,953-14-11. 5,480 sleepers converted at the depôt were made over to the Railway Department for Rs. 10,275 and the scantling the residue of this conversion, was sold by public auction for Rs. 6,016-4-7.

Woods of other kinds were disposed of by public auction and on indent, to the amount of 1,563 tons for Rs. 25,071-1 or Rs. 17-2-2 per ton. By far the largest portion was bought by Messrs Galbraith Dalziel & Co. for conversion into tea boxes. 10,2461 teak sleepers were sold to the Railway on account of the Salween division for Rs. 2,164,89-6-0 and the rejected sleepers 2,828 in number were disposed of for Rs. 1,839. 7,238 Pynkadoe sleepers were sold on account of the South Tenasserim division for Rs. 11,360-2-11.

In the Maulmain depôt.

121. At the Moulmein depôt, 1,866 Government teak logs containing 1,820 tons were sold by public auction for Rs. 48,332 or Rs 26-8-10 per ton. On indent 344 logs, 388 tons were disposed of for Rs. 13,372-8-0 yielding Rs. 34-7-5 per ton.

60 selected squares containing 40 tons 25 cubic were sent to Calcutta Mathematical Instrument Department realizing Rs. 4,455 or Rs. 110 per ton. The cost of this delivery was Rs. 1,320-5-0 in addition to cost of conversion. 216 logs of Padouk containing 144 tons 33 feet were delivered to Madras Gun Carriage Factory for Rs. 130 per ton realizing Rs. 18,806 ; the cost of this delivery amounted to Rs. 9,132-7-2 which includes erection of a crane and purchase of blocks and gear, Rs. 6,328 for freight, Rs. 567 for shipping, and Rs. 15,26-7-2 for unshipping and delivery at Madras. 230 logs containing 281 tons of timber other than teak, have been sold at Moulmein for Rs. 5,567-1-0 making Rs. 19-12-11 per ton.

Description of the mode of payment.

122. We experienced some difficulty in disposing of government teak timber by public auction. Cash payments before delivery are demanded at all Government sales. This may not be always convenient when large quantities of timber are bought by a firm, and more liberal terms can be arranged through the Bank of Bengal, by buying private timber lying at Kadoe. The accoukzohs of the sale are deposited with the Bank of Bengal, which either pay the Thitgoung or stand security for the amount. When the ship for loading arrives or is reported, the Bank releases a small quantity which is squared and put on board. The Captain's receipt for the squares is deposited with the Bank, another number of logs released, squared, loaded, receipted ,and so on till the ship is loaded and the accoukzoh released by Captain's receipts. When the squares are sold the Bank makes over the balance in favour of the trader to him.

A higher rate is realized by conversion.

123. There is however also a feeling which even has found expression, that if Government finds difficulties in disposing of its timber the present plan of working the forests will be given up. To show that such is not the intention and to make our working remunerative. I have begun to square some of our timber, so as not, however, unnecessarily to interfere with trade. Auction sales will always be tried in the first instance. In the first month of 1876-77, I ordered 40 logs to be converted for which Rs. 15 had been offered at auction and 25 for which we might have realized Rs. 40 per log. The result was that after the payment of all expenses they realized Rs. 25 and Rs. 51 respectively.

Disposals in other parts of the Province.

Transactions in other divisions.

124. In the *Prome division* 298 logs of teak, 220·5 tons, were sold for Rs. 12,654-0-3 or Rs. 57-6 per ton. In the *Tharrawaddie division* 129 logs teak burnt or otherwise damaged, were sold direct by divisional officer and realized Rs. 1,220-2-8. 102 logs teak timber from Padashin were sold on account of the Prome division realizing Rs. 7,010-4-9. 2,040 sleepers cut from the residue of teak were sold to the Railway for Rs. 612 net, they themselves undertaking the conversion. 17,131 pieces of Pynkadoe and 650 sleepers were made over to the Railway on indent realizing Rs. 64,259-14-0. 347 teak logs of sorts, aggregating 20,317 cubic feet or 406 tons 17 cubic feet, were made over to the Railway for Rs. 20,287 yielding Rs. 51-4 per ton. 25 logs were delivered to the railway containing 24 tons 30 cubic feet and yielding Rs. 1,007-8 or Rs. 40-15 per ton.

In the *Rangoon division* 6,519 pieces Pynkadoe were sold to the Railway for Rs. 39,972 or Rs. 14-15-0 per ton.

At Tounghoo in the *Sittang division*, 1,279 logs of teak principally short pieces were sold for Rs. 14,908-14-0.

They contained about 932·08 tons and realized thereon Rs. 16-5-0 per ton. 101 logs of drift teak containing 84·8 tons were sold at Tounghoo for Rs. 1,376-0 or Rs. 16-3-7 per ton, and 109 logs of the same description were disposed of at Shwegyeen realizing Rs. 1,839 and fetching Rs. 20-0-2 per ton.

Five drift teak logs were sold to the Public Works Department at Hpyoo Choung for Rs. 390-0-0.

125. A recapitulation of disposals of Government timber shows as follows. Table showing total of disposals.

TEAK.		Logs.	Pieces inclusive of shingles.	Sleepers	Tons.
To the Public..	By Depôt Agency :—				
	Rangoon	20,254	...	1,918	19230·33
	Maulmain	2,210	294,088	...	3615·2
	By Sales in the Province	1,280	...	..	933·0
To Government Departments...	Railway Department	1,779	28,217	104,028	5099·8
	Public Works Department...	171	...	...	175·0
	Exported	130	...	...	90·25
	Drift confiscated and Waif	1,707	...	...	1627·9
	Total Teak...	27,531	3,22,305	105,946	30771·48
	Woods of other kinds :—				
To the Public..	Rangoon	1,354	...	7,299	1343·42
	Maulmain	230	...	...	281·0
To Government Departments...	Railway	...	23,604	650	9677·1
	Exported	216	...	...	144·6
	Drift confiscated and Waif	...	...	364	10·9
	Total Woods of other kinds	1,800	23,604	8,313	11457·02

Working stock, Elephants.

126. The number of departmental Elephants at the beginning of the year was ... ... 78 No of departmental elephants.

Males	46	
Females	32	
Number purchased during the year:—		13
Males	11	
Females	2	
1 Male Calf grown up and brought on to list		1
Total ...		92
Paid for by Contractors, ...		18
Males	16	
Females	2	
Casualties		12
Males	5	
Females	7	
Sold by Public auction (Male)		1
Balance at 31st March 1876		61
Males	36	
Females...	25	

127. The large number of casualties which amount to 13·04 per cent is chiefly due to the purchase of a batch of 11 Elephants from ex permit-holders during 1874-75. These Elephants had been overworked and were in bad condition, they died all with the exception of three, some without ever doing any work for us. Sickness and mortality among the elephants.

But even with apparently healthy Elephants their death is often unaccountable.

I had a strong male out with me in Camp and he never carried any thing heavier than a howdah. After 5 weeks march during which he steadily improved in condition, he suddenly was knocked up one morning after a ten miles walk, and died 2 days later. At this present moment the Bombay Burma Company lost 6 Elephants within a week and just at a time when their work was slack. Dr. Gregory a medical gentleman in Rangoon held post mortem examinations, and the sudden death was attributed to their eating the soft green grass sprouting up at the beginning of the rains, but change of the food has not had the desired effect and 5 more of our Elephants are on the sick list.

Purchase of new elephants.

128. The value of Elephants increases steadily. The purchases we made during the year amounted to

Males	...	...	Rupees	...	3,500
Females	...	...	„	...	9,130

This shows an average of Rs. 1,759 paid for males.
and of Rs. 830 paid for Females.

Seven elephants were purchased for the Bengal forest department for Rs. 9970-11 and sent overland to Chittagong. The amount was refunded. The value of Elephants loaned to Contractors during the year, was estimated at Rs. 46597 and the interest paid on living Elephants amounted to Rs. 4946.

Dead stock.

Purchase of dead stock.

129. A schooner the "*Nora*" was bought for the South Tenasserim division for Rs. 2,500, a gig for the depôt at a cost of Rs 450, the old and useless one was sold for Rs. 15 at auction. Another small boat was bought for the Tharrawaddie division, at a cost of Rs. 100 and the purchase of two steam launches and several boats, has been sanctioned.

Communications and buildings.

Buildings in the wood depôts.

130. This includes only the Rangoon and Moulmein depôts. In the former nothing was done besides the usual annual repairs including roofing of the depôt house, the completion of the seasoning shed and the building of a small boat house. The total expense on these works amounted to Rs. 836. In the Moulmein depôt a new Elephant shed was erected at a cost of Rs. 476 and the lower guard house was pulled down and rebuilt in a more advantageous place. On these structures were expended 4 tons of scantling, 600 shingles and 50 slabs.

Contractors.

Transactions with contractors.

131. The number of contractors employed by the Forest Department as well as the amount outstanding by them, has been considerably decreased during the year. There are now 105 contractors employed on timber works and the whole amount of partpayments unrecovered amounts to Rs. 67234, against Rs. 2,24,552 in 1874-75. The decrease is in some part due to the writing off of Rs. 58,375-4-7 as bad debts by order of Government of India letter No. 227, dated 11th March 1876, but also to a change in the system of working.

The practise of part payments gradually diminishin.

132. The practice of part payments which has hitherto been accepted as an absolute necessity, is limited and I hope will gradually be done away with. In the Rangoon division no outstandings exist any longer, and no part payments are made, and in the Salween division where large part payments had to be made last year, our chief Contractors Koh Sit Poh's heirs have already about 10,000 logs at the rope station on which no advance has been made, and which will by the time they arrive at Kadoe represent Rs. 1,40,000 due to contractors. In the Tharrawaddie division, the outstandings are gradually decreased. The balance due from the teak timber contractors amounts to Rs. 37,681-14-4 and only 3,065

of this is on account of part payments unadjusted. Rs. 30,697 represent Elephants loaned against the payment of interest due and unadjusted cost of dead elephants Rs. 4,212-3-0 were due by Contractors for Pynkadoe sleeper pieces at the end of the year, since Rs. 1,041-6-0 have been recovered, but it is doubtful whether the rest will be recovered if according to the wishes of the Railway department, these deliveries are abruptly to cease. In the Rangoon division the same contract was worked without part payments.

Abolishment of part payments in the Rangoon division.

133. Mr. Strettell was the first officer who grappled with the subject of part payments and reports as follows. "When I joined in February 1873 the bad debts in the Rangoon division amounted to Rs. 11395-12-8. Their origin has already been explained, and application made for them to be written off the books. Exclusive of these debts at the close of 1872-73 (a month subsequent to my assuming charge) the following figures represent the sum due to the Department by the Contractors in this division.

Moung Htoon Gyaw	1,947	14	8
Moung Engyke	3,320	4	0
Moung Htoon Yeh	500	0	0
Moung Myat Nay	2,500	0	0
Total	8,268	2	8

This state of affairs caused me great anxiety and led to a careful study of the system in force. To cut a long matter short, the system resolved itself into one of making advances or to use the local expression "part payments" on very unsafe security. A contractor could always borrow money on an elephant he stated he possessed, but no provision was made in case of the animals death which often occurred leaving the owner deep in our debt, then again, advances were made on a report of a forester, to the effect that a certain quantity of timber had been felled and dragged to the floating stream; but as most of these men can barely sign their names it is probable the certificates were written by some of the Contractors, a belief in a measure supported by the fact that at the end of a year when the accounts were made up it was always found that the quantity of timber extracted no where near covered the advances made, thus it became necessary to debit the Contractors with the balance due to the Department. Once embarrassed, and the contractors finding the mill stone hang heavier each year until they began to get accustomed to the incubus, they became callous as to how their account stood, provided a part payment was forthcoming, the Department on the other hand in the hopes of gradually recovering the large out-standings, continued advancing money, a system that eventually resulted in the bad debts above referred to. During the last three years I have endeavoured gradually to bring about a change in the system under which timber has been extracted."

Management of the Kadoe Revenue Station and Summary of yield of Teak Forests beyond the Frontier.

(*a.*) KADOE.

General description of Kadoe Revenue work

134. The Kadoe revenue Station is a vast timber dock managed by Government. There are no frontier dues levied on any of the tributaries of the Salween, and the timber imported from foreign territories is brought down to Kadoe, where it is reported, registered, stored and kept under Government supervision till it is sold. As soon as sold, it is released on the payment of a duty of 7 per cent. Each timber importer has his mark or marks registered at Kadoe, and only such timber as bears his registered mark is made over to him. The timber coming from British leased forests is subject to the same registration and the same payment of Revenue. Salved timber of both descriptions pays the salvage rate in addition to the Revenue.

Kadoe Salvage.

Whether the timber be foreign or British, the registration and further management of the timber at Kadoe are effected under the Forest rules of 1865.

Revenue on Foreign timber levied under Notification 5 F.

But the revenue, though the same in both cases, is levied on foreign timber under Notification 5 F, dated 31st March 1874, framed under Act XIII of 1873 ; and on Permit timber, under the rules of 1865, Act XIII only repealing these rules with regard to duty on foreign timber.

Receipts at Kadoe Revenue Station.

135. During the year, the books of the station show the entry of 1,52,736 logs, which are specified as follows :—

Foreign.	Logs	1,27,466	1,38,609
	Pieces	11,143	
British.	Logs	1,669	14,127
	Pieces	12,458	

Causes of increased out-turn.

The largely increased out-turn from foreign forests is partly attributable to the plentiful rainfall and consequently favorable floating season, but also to the steadily increasing security felt throughout the country. People now invest their capital in the most distant forests in full confidence that their interests will be protected.

Dacoities in connection with the Station.

136. Robberies and dacoities by the people of the country are of rare occurrence, and I am informed that sums larger than ever before, have this year been sent up into the forests across our frontier. The only two cases of robbery that came to notice during the year, were perpetrated by the servants of the Thitgoungs themselves. Moung Taw was thus robbed of Rs. 1,700, on the Salween river near Toung Eng by two Karenese servants, who made off with the money during the night ; and then Kadoe traders Kohtah, Thaoo, and Shway doo were murdered by their servants, inhabitants of the Karenese country for the sake of Rs. 3,000. These men had been in their service for many years. On the west bank of the Salween a Thitgoung, Looglay of Tan Eeing village was lynched. Though once, one of the leading Thitgoungs this man had for years been connected with fraudulent timber cases, and had made his living by marking timber felled by other parties, or over-marking logs. He was caught in the act, and is reported to have been roasted alive over a camp-fire. There is also a considerable decrease in timber litigation, which has a beneficial effect.

Comparative statement of import of Foreign Timber for three years.

137. The following short Statement will show how the import has steadily increased for the last 3 years :—

Name of Forest.	1873-74		1874-75		1875-76	
	Logs.	Pieces.	Logs.	Pieces.	Logs.	Pieces.
Kannee	24,449	5	46,749	272	58,230	4,628
Kynetoon	5,555	..	5,373	151	8,793	1,162
Minelongyee	20,680	29	22,441	404	27,929	282
Thoungyeen	20,941	78	19,227	305	25,846	4,990
Dagai	3,894	42	4,713	96	6,163	81
Tonghoo...	...	...	80	...	505	...
Total...	75,519	154	98,583	1,228	1,27,466	11,143

Large increase of inferior timber.

Attention is at once drawn to the fact that whereas the importation of logs has not quite doubled during the three years, that of inferior timber has increased 72 fold.

Is this due to demand or exhaustion of Forests.?

Dr. Slym, the Deputy Conservator in charge, believes this to be the consequence of an increased demand only, but I am inclined to take a darker view of it and fear it may be the first foreboding of a future exhaustion of the forests beyond our frontier. This opinion is strengthened by the fact that, year by year, the percentage of inferior timber increases amongst logs of larger size.

Decrease of British Timber.

The British timber reported at the duty station exhibited a decrease of 6,903 logs and pieces, against last years registration.

The Permit System.

138. The permit system in British forests is on the decline. The forests leased to the Permit holders are gradually worked out, and as no new leases are given the number of logs registered at Kadoe will become less and less, and the system will gradually die out.

If we wait for this period, I feel convinced that a small outlay will suffice to bring the forests back under direct Government management. They will be profitless for a long time, and no private speculators will care much to keep them.

Period coming when Forest leases can be re-bought.

139. The following is a specification of the timber reported.

Specification, British Permit Timber.

	Logs.	Pieces.
Upper Salween	1,291	73
Lower Salween	...	5,307
Thoungyeen	157	4
Pandau	...	6,964
Attaran	221	110
Total...	1,669	12,458

We observe again an alarmingly increasing amount of inferior timber. It must be admitted that, to a great extent, this is due to a more accurate system of registration which does not allow any misreporting. Formerly, people preferred to pay Rs. 2-12-0 per log, instead of having inferior timber entered in their timber-certificates. Another reason of the inferiority of timber is, however, that the Forests are worked out or nearly so.

Reason of increase of inferior Timber.

140. The number of logs which passed out of Kadoe during the official year amounts to 1,21,578, leaving a balance of 83,454 in hand at the beginning of 1876-77. Since then 39,000 have been cleared.

Logs which paid duty in 1875-76.

During the year Rupees 3,05,618 were realized from timber duty, viz. Rupees 2,98,761 on Foreign timber and Rupees 6,857 on British ; against Rupees 2,20,934 on Foreign and Rupees 16,122 on British timber during 1874-75.

Amount of duty realized.

141. The mode of levying an ad valorem duty on the selling price of timber has again given entire satisfaction, and is now unanimously regarded as the most advantageous to Government as well as to the trade. During the year a large quantity of inferior timber passed through the books, most of which sold at very small prices, even as low as Rs. 7 per log—and the old rate of duty of 1-6-0 per log on such timber would in many instances, have prohibited their selling, and thus have checked trade—At the same time the Forest Department realized an average income of Rupees 2- 7-2 per log, instead of
„ 2-12-0 on 86131 logs
„ 1- 6-0 on 2153 undersized logs and
„ 0- 9-0 on 7167 stem pieces
rates which would have only yielded an average of Rs. 2-5-7 per log.

Ad valorem duty on selling price a perfect success.

142. During the year, 339 marks were registered at the Kadoe office, 145 of these were new marks, 194 old ones re-registered.

Registration office at Kadoe

143. An increase of 54 new marks is apparent against the registration of last year, which can be accounted for by the rising enterprise of the Shan timber traders, who begin to import timber into Moulmein instead of selling it in their Forests to middle men, and timber brokers.

Increase in new marks.

The increase of 122 renewals may be regarded as a proof of a stricter management of the Kadoe Station. The income from registration is Rupees 3,390.

Increase in renewals.

144. During the year, 20 cases were tried under the Timber revenue rules ; and of the 25 persons concerned in them, 18 were convicted and punished by confiscation of timber, and fines aggregating Rs. 495.

Breaches of Revenue rules.

Division.	Forest or locality where offence occurred.	Nature of offence.	No. of persons.	Punishment inflicted.
Salween.	Kadoe ...	Breach of Rule 13 Schedule VII of Forest Rules.	1	4 logs detained.
	Attaran Forest ...	Breach of Rule 7 Schedule VII of Forest Rules, passing of timber below Nantay Station without order.	1	Fined Rs. 5.

Division.	Forest or locality where offence occurred.	Nature of offence.	No of persons.	Punishment inflicted.
Selween.	Kadoe ...	Breach of Rule 13 Schedule VII of Forest Rules. Defacing of teak timber.	1	Dismissed.
	do. ...	Breach of Rule 3 Schedule VII page 497, incorrect report.	1	Fined Rs. 50 and 50 Rs. unlawful money forfeited, and 1 log detained.
	do ...	Breach of Rule 3 Schedule VII page 497, incorrect report.	1	Discharged.
	Meebone ...	Breach of Rule XXVII, Schedule X, page 503, of British Burmah Hand Book, collecting or salving of timber without permit.	1	Fined Rs. 50.
	do. ...	Rule XVIII, British Burmah Hand Book, page 487, collecting timber without order.	2	Fined Rs. 10 each.
	Kadoe ...	Rule XIII, of Schedule VII, of Forest Rules; defacing of timber.	1	6 logs detained
	do. ...	Breach of Rule 3, Schedule VII, of Forest Rules, incorrect report.	1	Fined Rs 10.
	do. ...	Breach of Rule 3, Schedule VII, of Forest Rules, incorrect report.	1	Fined Rs. 50.
	do. ...	Rule I, Schedule VII, of Forest Rules.	1	Pending.
	do. ...	Breach of Rule 3, Schedule VII, incorrect report; found in possession of defaced timber.	1	6 logs detained and 8 days simple imprisonment.
	do. ..	Ditto.	1	2 logs detained, and fined Rs. 50 or in default thereof to suffer one month's simple imprisonment
	do. ...	Breach of Rule 3, Schedule VII, incorrect report.	1	Pending.
	do. ...	Breach of Rule 28, Chapter IV, and Rule 36, Chapter V, of Forest Rules. Incorrect report; found in possession of defaced timber.	2	Pending.
	do. ...	Breach of Rule 3, Schedule VIII. Incorrect report; found in possession of defaced timber.	1	Pending.
	do. ...	Ditto.	1	Pending
	do. ...	Breach of Rule 3, Schedule VII. Incorrect report, found in possession of defaced timber.	1	3 logs detained and fined Rs. 50 or in default thereof to suffer seven days' simple imprisonment.
	Martaban ...	Breach of Rule 27, Chapter IV. Passing of a raft of teak timber without order.	4	3 defendants dismissed and 1 defendant fined Rs. 50.
	Kadoe ...	Breach of Rule 3, Schedule VII and Rule 19, Chapter IV, of Forest Rules. Incorrect report, found in possession of defaced timber.	1	7 logs detained.
	do. ...	Breach of Rule 3, Schedule VII, and Rule 19, Chapter IV, of Forest Rules. Incorrect report; found in possession of defaced timber.	1	1 log detained and fined Rs. 50.
	do. ...	Breach of Rule 3, Schedule VII; incorrect report.	1	8 logs detained and fined Rs. 10.
	do. ...	Breach of Rule 28, Chapter IV, and Rule 32, Chapter V, of Forest Rules. Incorrect report; found in possession of defaced timber.	2	1st defendant's 10 logs confiscated, 2nd defendant fined Rs. 50.
	do. ...	Rule I, Schedule VII, of Forest Rule. Incorrect Report.	1	5 logs detained and 3 ,, confiscated.
	do. ...	Breach of Rule 3, Schedule VII, page 497, Incorrect report.	1	11 logs detained.

145. The revenue station shows the following balance sheet. Balance sheet of Revenue Station.

Revenue.	Foreign	Rs.	2,98,761-7-0
	British	,,	6,857-0-0
Sale of Confiscated Drift and Waif Timber		,,	8,684-4-0
Miscellaneous		,,	238-8-0
Registration		,,	3,390-0-0
			3,17,931-3-0
A. Conservancy & Working...		,,	18,516-11-0
Salaries		,,	6,443- 1-0
Miscellaneous		,,	20- 0-0
Sundries		,,	35-14-0
			25,015-10-0
Exhibiting a profit of		Rs.	2,92,915-9-0

(*b.*) *Timber imported into Pegu.*

146. Timber brought from the territories of His Majesty the King of Burma is liable to be taxed under Section III of Act XIII of 1873, but exempted from taxation by Notification 5 F dated 31st March 1874, curiously to say framed under the article imposing the tax. Burma Timber duty free.

The following timber was imported during the year into Pegu. Timber imported by Sittang & Irrawaddie.

	Logs.		Tons.
By the Sittang	38,327	...	38,327
,, the Irrawaddie	12,030	...	8,293

shewing a large increase against the imports of former years, but not including large quantities which are beached on the Sittang, and which will arrive early during the beginning of the floating season. Last season was no doubt favorable but the large out-turn is also a proof of the energy and real hard work on the part of the Bombay Burma Trading Corporation Contractors, Messrs. Darwood and Goldenberg.

(*c.*) *Grand total of the timber imported.*

147. A compilation from the foregoing paras. exhibits the importation from beyond the frontier as follows :— Total Imports.

By Salween	Logs.	1,38,609	Tons.	1,66,330·8
,, Sittang	,,	38,327	,,	38,327·
,, Irrawaddie	,,	12,030	,,	8,293·
	Total...	188,966	,,	2,12,950·8

SECOND PART.

FINANCIAL.

148. A glance at Statement No. 21 the Summary of Revenue and Expenditure, will show that the actual receipts of the year amounted to... Rs 18,37,395 Summary of Receipts and Expenditure.

Against an Expenditure of ..... ,, 8,14,749

Exhibiting a surplus net revenue of ..... ,, 10,22,646

To this has to be added ..... ,, 8,496

expended on Cinchona plantations, which is part of Imperial expenditure under the Government of India letter No. 238, dated 10th July 1875 ;

raising the surplus to ..... Rs 10,31,142

The net profit compared with that of 1874-75 viz. Rs. 4,12,164 shows an increase of Rs 6,18,878 and amounts to 56·66 on the total expenditure of the year. Rs. 1,85,000 were spent on deliveries to the Railway according to arrangements made previous to the year under review. The transactions, which were not intended to be remunerative, actually resulted in a loss. Without them our net pr[illegible] would have amounted to 69 per cent. Net pr[illegible] plaine[illegible]

able of per-age on pro-

149. The following table exhibits the precentage of net profits from the time the Forest Department was created, showing an average of 42 per cent.

Year.	Total income.	Total expenditure.	Net profit.	Percentage of net on whole income.
1856-57	86,243 13 0	1,56,329 5 5	.....	.....
1857-58	80,619 12 9	2,55,112 10 11	.....	.....
1858-59	4,30,679 1 10	1,99,038 10 11	2,31,640 6 11	46 per cent.
1859-60	2,17,503 12 0	1,73,658 4 0	43,845 8 0	20 ,,
1860-61	2,50,925 11 6	2,76,753 9 1	.....	.....
1861-62	3,96,885 2 0	3,22,334 7 0	74,550 11 0	18 ,,
1862-63	3,53,487 3 0	3,09,929 13 0	43,557 6 0	12 ,,
1863-64	7,65,619 9 0	2,35,700 8 0	5,29,919 1 0	69 ,,
1864-65	9,36,232 13 0	2,63,239 2 0	6,72,993 11 0	71 ,,
1865-66	8,98,628 12 0	3,12,066 9 0	5,86,562 3 0	65 ,,
1866-67	4,24,053 11 0	2,85,135 8 0	1,38,918 3 0	32 ,,
1867-68	6,47,590 5 8	3,28,387 13 6	3,19,202 8 2	49 ,,
1868-69	8,17,911 11 5	4,23,129 4 5	3,94,782 7 0	48 ,,
1869-70	9,84,875 11 4	4,15,381 15 3	5,69,493 12 1	57 ,,
1870-71	8,18,124 4 0	4,00,035 7 9	4,18,088 12 3	51 ,,
1871-72	7,72,399 9 8	3,78,450 6 1	3,93,949 3 7	52 ,,
1872-73	8,27,568 13 7	3,36,197 12 4	4,91,371 1 3	59 ,,
1873-74	10,68,621 6 8	4,74,531 10 8	5,94,089 12 0	55 ,,
1874-75	10,74,802 4 2	6,62,637 13 6	4,12,164 6 8	38 ,,
1875-76	18,37,395 3 2	8,14,749 11 2	10,22,645 8 0	56 ,,

Remarks on orm No. 21.

150. Form No. 21 is useless as a key to the income derived from the different divisions, as large items of revenue are received by the Rangoon Agency office, and credited in their books ; as far as other divisions are concerned, it shows only the actual cash receipts of each division. In a lesser degree, this is equally true as regards expenditure.

Comparison of ems of Reve-ue.

151. Revenue I. 1. *a.* shews an increase of Rupees 9,73,814, whereas Rev. I. 2. *a.* has decreased by Rs. 1,20,718, and Rev. I. 3, by Rs. 1,74,792. The decrease of Rev. I. 2. *a.* is the natural consequence of the abolishment of the permit system. As regards Rev. I. 3, last year's revenue included Rs. 1,65,784, under the item derived from timber confiscated in the Sittang division, moreover the value of 3000 logs of drift timber, has been entered under Rev. I. 1. *a.* These were logs converted into sleepers at Moulmain, and sold at Rangoon. They represent a value of at least Rs. 30,000. The revenue on foreign timber has increased by Rs. 77,827, and an increase of Rs. 6,451 is shown under Rev. IV Miscellaneous.

Comparison of xpenditure.

152. Head A. I. 1. *a.* shows an increase of Rs 91,440, due to increased timber work, and large deliveries to the Railway Department. The decrease of Rs. 2,341 under A. I. 2. *a.* is explained by the almost total abolition of the permit system. The expenditure under A. I. 3. has increased by 7,122, but the revenue derived from drift timber shows as explained above, an increase of more than Rs. 20,000. A. IV. 2. *a.* shows an increase of Rs. 10,662 spent on Plantations. Altogether, the expenditure under A. IV, has, I am happy to say, increased by Rs. 13,230, but this sum contains Rs. 8,496 spent on Cinchona Plantations. This expenditure is according to order No. 238, dated 10th July 1875, from the Government of India, not to be debited to Forests, but against Imperial Revenue. Excluding this item I find that Rs. 47,771 have been spent on Forest Conservancy, including sums distributed for surveys and examination of forests, Rs. 12,668, on works of utility, and Rs. 5,91,014 on account of exploitation, the felling of timber, and realization of its value.

These figures explain the inefficiency of our conservancy more than any thing that might be said or, written, and Government will sooner or latter have to acknowledge that it is not fair towards their forests to spend on them, that is, merely for their amelioration, an insignificantly small percentage of the value of the material drawn from them.

Rupees 1,02,97,694, represent the value of Teak extracted since 1856-57 ; Rs. 5,47,868 the amount spent on conservancy during the same period.

153. With exception of the charges under B Establishment, and the expen- on works of conservancy and utility, and of those under the head of cost of ental cattle, the budget has been exceeded in every instance. This was de, as the aspect of the work changed considerably during the year.

Assets.

154. The outstandings by contractors show a decrease of Rs. 1,57,318. This sum includes irrecoverable debts written off as profit and loss; of the balance outstanding at the 31st March 1876, Rs. 40,000 were recovered in April 1876, and I feel certain that with judicious handling during the floating, next season, the official year 1876-77, will close with petty outstandings only. Outstandings by Contractors

155. The value of Elephants loaned to contractors amounts at the end of the year to Rs. 30,697. Elephants loaned.

156. The outstandings on timber sold amount to Rs. 47,246-12-4 and of these only Rs. 17,652 are due by the Public on account of March's sale, covered by the timber still in depôt. The balance is due by other Government Departments. Outstandings of timber sold.

157. The duty realizable on the timber stored at Kadoe revenue station, amounts to Rs. 1,63,140. Timber dues.

158. The cost of extraction of Government timber by Government Agency and Contractors, amounts to Rs. 12-8-9 per ton, and if cost of administration, direction &c., be added—to Rs. 16-12-10 per ton, which compares favourably with the expenditure of last year. Cost of Extraction of Government Timber.

159. The following table shows the out-turn and Expenditure on such out-turn from 1856-57, up to date, giving an average cost per ton of Rs. 11-7-10 and if administration charges are added—of Rs. 16-12-11 per ton. Table exhibiting out-turn and Expenditure from 1856-57 to 1875-76

Government timber worked out by Contractors.

Year.	Out-turn in tons.	Timber expenses.	Cost per ton.	Amount paid to Contractors including Depot charges.	Cost per ton.
1856-57	13,852·	2,12,804 2 8	15 5 9	1,58,432 4 0	11 5 4
1857-58	10,510·	2,07,127 12 4	19 11 2	1,28,090 10 0	12 3 0
1858-59	11,245·	1,89,989 0 6	16 14 3	1,33,534 6 0	11 14 0
1859-60	6,581·	1,73,653 4 0	26 6 2	96,029 6 0	14 9 5
1860-61	8,376·6	2,55,759 0 0	30 8 0	1,19,255 4 8	14 3 9
1861-62	14,014·1	2,61,625 6 0	18 10 6	1,88,942 6 7	13 6 7
1862-63	16,369·3	2,33,742 7 0	14 4 0	1,83,851 11 0	11 3 8
1863-64	10,292·2	1,48,339 1 0	14 6 0	1,11,165 15 0	10 12 9
1864-65	6,471·8	97,199 2 0	15 0 0	71,552 13 0	11 10 10
1865-66	14,262·5	1,98,062 9 0	13 4 0	1,83,075 0 0	12 14 0
1866-67	9,795·6	1,81,950 11 0	18 9 0	1,46,977 15 0	15 0 0
1867-68	8,646·6	1,58,345 4 6	18 5 0	1,35,268 9 0	15 10 3
1868-69	21,388·8	3,19,625 2 5	14 15 1	2,22,604 13 0	10 6 6
1869-70	16,152·1	2,86,521 15 3	17 8 9	1,25,227 14 0	7 12 0
1870-71	22,765·6	3,28,022 10 0	14 6 6	1,89,004 9 0	8 4 10
1871-72	21,401·3	3,09,376 10 7	14 7 3	2,00,080 9 2	9 5 6
1872-73	14,615·	2,39,323 6 10	16 6 3	1,27,979 14 0	8 12 1
1873-74	26,790·6	3,79,723 5 3	14 2 9	2,75,922 1 2	10 4 9
1874-75	21,058·4	4,27,655 11 6	20 4 6	2,76,448 10 9	13 2 0
1875-76	51,594·6	8,67,269 10 2	16 12 10	6,85,373 10 5	13 0 0
					0 2 0

160. The prices realized throughout the year amount to Rs. 39-5-3 showing again an increase of Rs. 5-3-1 per ton.

Table exhibiting prices realized on Government Timber from 1856-57 to 1875-76.

161. The following table shows the prices realized per ton since 1856-57.

Government timber sold.

Year.	Amount sold.	Income thereon.	Price per ton.
1856-57	5,893·0	75,264 0 9	12 12 4
1857-58	7,845·0	1,12,054 10 2	14 4 6
1858-59	4,617·0	3,75,923 6 2	25 5 4
1859-60	11,689·1	2,33,095 0 10	19 5 1
1860-61	6,875·5	2,21,975 9 11	32 4 6
1861-62	11,569·6	2,47,954 5 0	21 6 10
1862-63	10,281·7	2,17,980 4 0	21 3 2
1863-64	12,648·9	2,29,578 9 0	18 1 7
1864-65	13,559·5	3,81,460 5 0	28 2 1
1865-66	12,423·7	3,96,437 12 0	31 14 6
1866-67	6,240·7	15,835 4 0	24 5 3
1867-68	9,832·6	2,70,321 8 0	27 7 8
1868-69	10,431·5	2,80,329 11 6	26 13 11
1869-70	19,525·5	5,69,075 13 8	29 3 2
1870-71	15,105·3	3,37,573 3 6	22 5 6
1871-72	16,331 1	3,73,635 14 9	22 14 0
1872-73	16,264·7	3,35,107 4 2	20 9 7
1873-74	25,139·1	7,11,143 13 5	28 4 7
1874-75	22,444·3	7,65,017 4 8	34 2 2
1875-76	42228·5	12,80,270 7 2	39 5 3

162. The following abstract table shows the net profits realized per ton since 1856-57 compared with the net receipts per ton of timber worked by Permit holders.

Table exhibiting net profits on Permit Timber from 1856-57 to 1875-76.

Permit timber sold.

Year.	Amount sold.	Income thereon.	Income per ton.	Charges debitable to the account.	Net Receipts.	Net Income per ton.
1856-57 ...	Permit system not in force.					
1857-58 ...						
1858-59 ...						
1859-60 ...	3,911·	44,090 0 0	11 8 5	14,788 7 0	29,301 9 0	7 7 10
1860-61 ...	9,079·	93,657 0 0	10 5 0	35,748 9 0	57,908 7 0	6 65 10
1861-62 ...	8,024·	1,17,014 4 0	14 11 1	42,599 0 0	75,315 4 0	9 6 2
1862-63 ...	19,530·	1,65,793 12 0	8 7 9	58,378 12 0	1,07,415 0 0	5 8 0
1863-64 ...	22,655·	2,20,662 5 0	9 11 10	59,616 11 6	1,610,45 9 0	7 1 8
1864-65 ...	12,829· 6	1,91,170 6 0	14 15 3	58,625 9 0	1,32,544 13 0	10 5 3
1865-66 ...	23,657· 2	2,24,462 2 0	9 7 9	61,216 11 0	1,62,915 7 0	7 14 2
1866-67 ...	21,756·	1,09,362 3 0	5 0 5	60,178 9 0	49,183 10 0	2 4 2
1867-68 ...	24,458·	2,04,218 9 8	8 5 7	63,760 6 3	1,40,458 3 5	5 1 10
1868-69 ...	30,919·	2,87,104 15 11	9 4 6	52,220 11 0	2,34,887 4 11	7 7 6
1869-70 ...	23,692· 6	2,75,113 14 8	11 9 9	68,644 11 0	2,06,449 3 8	8 11 4
1870-71 ...	34,321· 3	2,78,299 5 6	8 1 8	85,550 5 9	1,82,738 15 9	5 5 2
1871-72 ...	30,660· 3	2,74,929 8 8	8 15 5	80,290 0 6	1,94,639 8 2	9 2 0
1872-73 ...	21,319·	1,94,097 1 1	9 2 5	87,488 2 10	1,06,608 14 3	5 0 0
1873-74 ...	22,001·14	1,49,394 2 3	6 12 7	71,099 12 5	78,294 5 10	0 5 8
1874-75 ...	21,517·	1,57,282 4 0	7 4 11	81,360 2 6	75,922 1 6	3 0 10
1875-76 ...	6,094·	36,547 6 9	5 15 11	16,758 8 0	19,788 14 9	3 3 11

Average of Government and Permit Timber.

163. The average net income per ton by Government agency is therefore Rs. 9-6-6 against Rs. 5-15-10 per ton on timber extracted by Permit holders

Profits on converted teak timber.

164. 192 tons of timber converted for the Calcutta market realized Rs. 9-6-0 per ton on the material before conversion over and above value of timber in the round.

Profits on converted Teak

40·5 tons converted for Mathematical department yielded Rs. 48 per ton on the gross contents.

31,521 sleepers supplied to the Railway at 1-14-0 per sleeper, show the following account inclusive of rejection.

Debtor.

31,521 Sleepers ...	Rs.	56,093 14 0
Scantlings	,,	27,902 0 0
Total Rs...		83,995 14 0

Creditor.

By Cost of conversion and transport &c., ...	Rs.	30,647 13 3
Balance	,,	53,348 0 9
Total Rs...		83,995 14 0

leaving a balance of Rs. 5,273 for 1,504 tons of timber converted at Rs. 3-8-0 per ton over and above value of the timber in the round.

78,802 sleepers supplied to the Railway at Rs. 2-4-6 per sleeper, and rejections at various rates exhibit the following balance.

By 78,802 Sleepers ...	Rs 1,73,378	9	0	By Cost of conversion and transport &c., ...	Rs 80,995	12	7
By Scantlings sold and estimated „	80,495	11	5	Balance	„ 1,72,878	7	10
Total Rs...	2,53,874	4	5	Total Rs...	2,53,874	4	5

3,274 tons timber were converted yielding Rs. 63-14-0 per ton.

Timber other than Teak.

Profits on timbers other, than teak reviewed

165. The deliveries to the Railway of 23,650 Pynkadoe pieces was financially unsatisfactory. The deliveries cost the Forest Department Rs. 1,09,104-7-3 and only Rs. 1,02,397-11-3 were paid by the Railway Department leaving us losers to the amount of Rs. 6,706-12-0 and with questionable outstandings by contractors amounting to above Rs. 3,000. Sleepers might have been delivered much cheaper, if cut up in the forests but our department was merely responsible for the execution of contracts made previously to the year under review, contracts which necessitated the moving of heavy pieces of Pynkadoe.

Profits on Padouk.

The Forest department realized by the delivery of 144·66 tons of Padouk timber to the Madras Gun Carriage Factory Rs. 9,761 after deducting all expenses of delivery, or Rs. 67-8 per ton yielding a net profit of Rs. 49-8 per ton after deducting cost of extraction.

Small profits on Thitka Thitkadoe &c

Thitka, Thitkadoe and other woods brought into the public market realize as yet but small profits. Since 1873-74 the expenditure on such woods has been Rs. 1,09,214 against an income of Rs. 1,31,540 and a balance of wood value at Rs. 31,564, showing a profit of Rs. 53,890.

GENERAL REMARKS.

British Burma teak trade.

Export of teak from Rangoon.

166. During the year 57,010½ tons of teak were exported from Rangoon to the following harbours, showing an increase of 17,843½ tons against last year.

Ports		Tons.	Value. Rs	A.	P.
Foreign ...	United Kingdom	25,158	17,76,092	0	0
	Straits...	32	2,817	0	0
	Ceylon...	3½	330	0	0
	Siam	2	180	0	0
	Cape of Good Hope...	116	9,280	0	0
Teak Timber...	Total...	25,311½	17,88,699	0	0
Indian ...	Bengal..	7,643	5,78,681	0	0
	Madras...	1,628¼	1,19,222	0	0
	Bombay...	22,791½	16,61,747	12	0
	Moulmein	212¼	14,768	0	0
	Arracan...	183 7/12	17,142	6	0
This includes other timber...	Total...	32,458 7/12	23,91,561	2	0
	Grand Total...	* 57,770½	41,80,260	2	0

760 tons are deducted on account of other kinds of wood exported.

From Moulmein.

167. The exports of teak from Moulmein during the year under review, have increased by 28,515 tons.

They amount to 105,154 tons sent to the following ports.

	Ports.	Tons	Value
			RS. A P
Foreign	United Kingdom	29,112	21,81,187 0 0
	Hamburg	199	15,928 0 0
	Cape	389	27,259 0 0
	Mauritius	1,205	59,869 0 0
	Ceylon	1,340	95,139 0 0
	Foochow	1,898	1,49,733 0 0
India	Penang	87	608 0 0
	Calcutta	28,237	18,76,462 0 0
	Bombay	21,605	15,89,710 0 0
	Madras	14,794	7,66,567 0 0
	Rangoon	5,730	3,35,088 0 0
	Andamans	233	18,895 0 0
	Pondicherry	340	14,894 0 0

Profits of the Timber trade diminishing.

168. Though imports and exports of teak timber have been steadily rising in quantity the profits accruing to the trader have decidedly diminished.

The cost of extraction is constantly increasing, as the timber has to be brought from more distant parts, whereas an over wrought competition and consequently over-stocked markets at home and in India, prevent the corresponding rise in the price of converted timber.

The timber prices at Rangoon and to some extent at Moulmein, are mainly regulated by the Bombay Burma Trading Corporation, in whose interest it is to keep the prices considerably above their cost of importation from Upper Burma.

They have the monoply of all the Upper Sittang Forests, and import and export large quantities of timber, and it is therefore of importance to them, to prevent the possibility of being under-sold in foreign markets.

Girdling operations need not cease

169. I do not believe that the cessation of girdling operations in British Burma will have any appreciable effect on timber prices. From the comparative statement below it will be seen, that calculating 2 logs per tree, thousands of them can still be brought out annually for some time to come, without exhausting the stock of dead timber.

Comparative Statement.

170. *Comparative statement exhibiting teak trees girdled and logs extracted from the Forests, from* 1856-57 *to* 1875-76.

Forests.	Trees Girdled.	Out-turn in logs	REMARKS.
Rangoon Division.			
Bonnee...	6,260	4,856	
Zamayee including Pegu	19,624	23,486	
Pounglin	2,250	2,226	
Maizaleo	3,875	19,467	
Oakkan	17,342		
Thongzai	22,994		
Magayee	6,076		
	78,421	50,035	
Tharrawaddie Division—South.			
Koon and Kadin Beeling	25,672	31,103	
Mokkha	5,842	12,540	
Minhla	10,315	18,635	
Tain Myoke, Myoung, Ngapeing and Kadet ...	2,450	11,918	
Gamoung...	13,775	14,058	
Toung Choung	3,710	9,809	
North.			
Boben...	17,195	29,486	
Mimboo and Kangyee	9,679		
Toung Nyo and Padingben	17,175	14,980	
Shaboung...	8,837	8,458	
Shoaylay and Bwet	19,023	27,510	
Various Forests	..	1,666	
	1,33,673	1,82,163	

Forests.	Trees Girdled.	Out-turn in logs.	REMARKS.
Prome East.			
Royal Forest	385	1,312	
South Nawing	12,439	20,007	
Middle Nawing	6,779		
North Nawing	6,059		
Choung Zouk	3,315	113	
Tsoon Choung	3,156	310	
Boolay	3,523	19,843	
Choungoungyee	2,000	...	
	37,656	41,585	
Sittang West.			
Koon	10,644	8,719	
Hpyoo...	7,166	12,119	
Khaboung and Kuaymathay...	10,676	10,505	
Tsamoh...	775	1,879	
Swah...	15,010	26,345	
Myohla	2,670	11,720	
East.			
Doonzareet	59	699	
Shoaygyeen...	...	984	
Padah...	4,647	4,990	
Moong...	3,531	6,444	
Youkthawah	5,294	4,967	
Thoukyaghat	4,373	14,254	
Kanneo	7,445	8,295	
Koonoung	8,376	16,630	
Gwathay and Bumbyay	4,823	8,461	
Eintoon and Toonkhan	745	1,839	
Pyoon Choung	...	186	
From all sources	...	151	
	86,234	1,39,187	

Forests.	Trees Girdled.	Out-turn in logs.	Remarks.
Salween Division.			
Beeling	3,003	2,351	
Yoonzaleen	2,856	3,940	
Lower, middle and Upper Thoungyeen	21,245	79,383	
Houndraw	...	173	
Hlino Boay	300	9,818	
Meeboug	...	8,836	
Phapoon	340	...	
Mittigate Kyouktaga	...	740	
Upper Salween I Division	...	} 30,096	
II Division	...		
III Division	...		
Lower Salween & Koloon	527	4,487	
Attaran Forests	...	9,579	
Domdamee	5,002	6,041	
	33,273	1,55,444	
Draft timber.			
Western Forest Division*	...	...	* Girdling carried out by Permit Holders: no girdling since 1873-74.
Matoon	...	} 36,482	
Mamyah	...		
Opoh	...		
Padashin	...	7,052	
Taladan	...	} 4,703	
Shoaytenga	...		
Bassein	...	4,270	
Mudday	...	8,377	
Quingouk	...	473	
	...	61,357	

171. There seems to be however but little doubt that most of the British Foresst in the Salween Division have been worked nearly to the end of their possibilities. My reason for this statement is the following report of Mr. Ferrars who was deputed to examine the Thoongyeen Forest, which was generally regarded as a valuable teak resource,* as well as the recommendations of the Divisional Officer Dr. Slym to allow rest to the other Forest tracts in the Salween Division, which he reports as worked out in his letter No. 391-30 dated 29th November 1875.

It may be gathered from Mr. Ferrars report, that it is not so much the actua want of ripe material which forbids a further working, as the distribution of these trees over large areas, and the inferior quality of the lower classes of trees.

Every body who has recently visited these Forests seems to agree that they have been overworked, but I cannot agree with them that a cessation of exploitation, would materially improve their condition. The only way towards their amelioration, is to artificially further reproduction according to the system discussed in this report under natural reproduction paragraph 50 which may go hand in hand with a judicious extraction of all timber that would not increase in value, by being allowed to remain in the Forests.

* *Note.*—How this opinion arose I am unable to state, as on a careful perusal of all former reports, I find that they agree in the main with that of Mr. Ferrars.

No. 15.

From Max Henry Ferrars Esqr. B. A. Assistant Conservator of Forests to M. J. Slym Esqr. Deputy Conservator of Forests Salween Division.—Maulmain 15th April 1876.

SIR.

I HAVE the honor to submit my report upon the examination of the Thoung-yin district.

* Conservator of Forests No. 1942 419, dated 25th October 1875.
* Conservator of Forests 1509-53, dated 6th September 1875.

2. The objects, collected from the correspondence marginally noted,* were—

I. To compare the present condition of stock in the district with the condition when last examined by an European officer.

II. To estimate the extent of the irregularities committed under the administration of Moung Poh Oh.

III. To ascertain in what degree the resources of the district might have been over-taxed.

IV. To obtain bases for check and for a plan of working.

3. Difficulties, chiefly arising from the magnitude of the work and the limitation in point of time, would have demanded preliminary notice at some length, if the results had been like those anticipated. The method by which it was attempted to compass the work was found to be, under the circumstances, quite adequate.

4. This method was to visit each spot in the district in which teak is found, to examine by traversing all the ground, recording the facts upon a uniform plan.

5. I had the assistance of one Forest Ranger and two surveyors. The *modus operandi* was repeatedly explained, and they were exercised in the practice of it. Their work was occasionally checked, and I am satisfied that they comprehended it and executed it trustworthily. I was in bad health the whole time, which prevented me from taking as active a part in the work as I could have wished, and necessitated entrusting the latter portion to my subordinates, under no check. In the Middle Toung-yin, after being six weeks in the district, I was taken very ill, and had to be carried in to Station. The northern most half of the Lower Thoung-yin, was not visited ; owing to the health of the two Surveyors breaking down, when their examination had reached that point.

I append the details of the examination in a tabular form: also a map in illustration.

6. I shall now proceed with a summary of the results.

7. The Thoung-yin valley, on the British side, is narrow. The hills approach the main river and its feeders so closely as, when not directly flanking them, to but rarely allow of the formation of little alluvial patches between the lowest spurs. The bed of the river is much inclined. Stretches without rapids are seldom long ; and partially obstructing rocks are common. The volume of water and character of the river itself are about the same as of the Thouk-yay-kat, the main feeder of the Sittang. The Houng-da-raw and Hlaingbway watershed ranges are very much higher than the succeeding hills in the direction of the Thoung-yin; they consist, in many places, of granite, and support a moderately luxuriant evergreen forest. In others, the slopes are so steep that mould cannot remain upon the surface, which, accordingly, is bare rock or detritus. Between the principal range (the watershed) and the Thoung-yin river are alternating low ranges of sandstone and of lime stone often connected by beds of laterite. The sandstone supports the same vegetation as in Pegu—' dry forest,' but of an arid and stunted type, on the crests and slopes, moist forest in the gorges. On the Siam side the dry forest appears to be very wide-spread: there are great expanses of country

resembling the outer Prome hills and used for toung-yah in precisely the same manner and degree. On the British side the type is restricted. The laterite supports the ordinary 'Ing forest,' the *thit-si* and *teh* ? elements failing ; in their place *pinus massoniana* grows sporadically—and occasionally, on eminences, pure. The 'Ing forest,' of this valley is a very arid type. Both the *ing* and the pine are much stunted. The limestone supports 'dry forest,' consisting, for the most part of the same elements as that on the sandstone hills ; it displays a wide range of degrees of luxuriance and aridity: an extremely arid type, however, predominates. The richer soil occurs at the foot of the hills ; their sides and summits are frequently bare rock, scarped and jagged, with trees more or less stunted growing in the crevices. I did not meet *pinus khasyana*, but it probably constitutes forest at elevations of 4000 feet and upwards. The elevation of the bed of the Thoung-yin at the junction of the Gan-li and Maygala streams must be at least 1000 feet, and at Mya-ya-wadi, 600 or upwards. The rainfall in the valley is very slight.

8. As already indicated, the hills, receding from the streams, abruptly gain in height, and become precipitous. They thus absorb the chief portion of the area, constituting an unbroken and unculturable waste, of some 150 miles in length, by 10 to 20 in breadth. This space is fringed, in the direction of the principal streams, and then only in the lower parts of their courses, by bands of varying breadth—300 to 700 yards—of less inacessible or less unproductive country. In these respects the constitution of the district is quite at variance with that common in Pegu, where range behind range, a uniform capability of production is repeated. For all practical purposes the fringe above referred to, and the district of the Thoung-yin are one and the same. We have to deal with an attenuated strip of territory, following the course of the main river and its principal branches ; with immense extension in point of length, we have a singularly insignificant extension in point of breadth. To visit the whole of the Thoung-yin in a single season is not so hopeless a task as it would otherwise be.

9. This strip may, in default of a better designation, be conveniently referred to as the *productive belt.* In it is situated all the alluvial and level soil of the district. The alluvial beds are in part converted into paddy-land, in part clothed with moist, in part with dry forest. In the latter teak occurs, both in patches of greater or less definiteness and richness, (A.) and sporadically. (B.) The alluvial ground occasionally merges into undulating or low hilly ground, resting on sandstone, clothed with very dry forest, the better parts of which are under toungyah. Here the belt attains its greatest width, and produces teak sporadically. (C.) Sometimes alluvial lands are connected or skirted by hills of limestone, with a belt of rich soil just at their base, supporting dry forest of the type common in the more fertile slopes of the Pegu Yoma, *viz.* bamboo (Kya-thoung) in the ascendant, with Pyinkadoh and teak. (D.) The slopes of these hills are extremely precipitous and support few trees, the vegetation being almost exclusively bamboo. The crest generally so scarped and jagged as to be almost impassable, maintains, in the deep crevices of the rocks, a spare vegetation of stunted trees, a considerable proportion of which are teak: (E.) bamboo failing. The productive belt is interrupted by excessively arid low hill tracts, supporting a little bamboo and small sparse struggling trees. The belt is broken by extensive tracts of 'Ing forest,' extending in many instances down to the banks of the river and following it for considerable distances.

10. In the excessively-arid hills are slight traces of teak, (F.) especially along the lines of drainage. In the *ing* forest are also traces of teak, (G.) sometimes over the tract generally, in the form of aged saplings, at others, of mature timber, here and there, along the banks of streams.

11. Seven very distinct groups of conditions under which teak is produced in the Thoung-yin district have now been enumerated. A. B. C. D. and E. are entitled to the more legitimate recognition as teak-producing, and are severally varieties of the dry forest or transitions to it from the bamboo waste. E. and G. are mentioned merely because the favourable position of the timber has enabled them to yield the market a number of trees which, under less favourable circumstances it would not have repaid to work out. I shall review these heads in succes-

sion, summarizing the knowledge collected with regard to each, under the sub-head 1. marketable stock, *a.* original resources in : *b.* present resources in. 2. rising stock. Before taking up the heads severally, there are some general observations which apply to all.

12. Throughout the Thoung-yin (except in moist and evergreen localities) the jungle-fires rage with unusual fury. The quick bark of the rhizom from the surface of the ground for some way up the stem or buttress, as the case may be; is destroyed down to the wood, and a considerable depth of the latter, even, charred by a single burn. No (teak) tree escapes these mutilations, and accordingly, each contracts defects, the greater proportion acquiring a considerable hollow at the butt. The fire eats deeper into the wood each year, reducing the support of many trees not yet quite dead, to such a degree that they fall over, or are easily blown down by the wind. *Natthat and aulay* (dead and windfall trees) in this district occur to such a degree as to represent the full 'possibility.' The district was equal to the production of scarce any surplus over its losses from this cause. Nearly every tree is *ta-chan-thay* (dead on one or more sides :) it is merely necessary to divide the strip of living bark in order to girdle (kill) the tree. Worm-holes penetrate all the timber. Whether these alone, or additional causes combine to produce the effect, want of vigour is universal. Growth in circumference is extremely slow, straight growth and freedom from branches on the bole, rare, and great height is not reached. But, as is natural under these circumstances, the timber itself is compact, not prone to split, shrink, or warp. The same holds good for much of the timber brought out by the Salween " Maulmain timber *versus* Rangoon timber" amounts simply to slow-grown *versus* quick-grown. The respective values of each are well known to producer and consumer, for their respective purposes. The position of the productive belt with regard to the river and its main feeders suggests great facility of extraction of timber. And, in fact, the facilities afforded by this district are unsurpassed. Thousands of trees have been felled into the water-ways, and the remainder of the resources are developed almost exclusively in the vicinity of the natural lines of transport. The extraction, as compared with the same operation in Pegu and elsewhere, was especially remunerative, and with remunerativeness was commensurate the high reputation of the district.

13. *A.—More or less definite teak-producing patches in the dry forest of the narrow alluvial beds.* The character of this dry forest is determined by absence of bamboo, compactness of the tree-vegetation, chiefly of mature size and of fair vigour. Pyin-ma and Lehza, Yin-ma and Thit-ka-doh occur more largely than in the dry forest on the hill sides.

14. *Mature teak*, in form A. does no longer occur. Abundant stumps evidence the former existence of patches of teak *forest*, properly so called. 20 to 30 stumps may in some instances be counted upon the acre. The timber cannot have been sound or large.

15. The trees of other kinds which grew with this teak must have been destroyed when the teak was felled for the result has been a young growth of teak so unmixed as to allow the soil to deteriorate These saplings make imperceptible progress. They are short, tapering and crooked.

16. The clear fellings are said by the people of the district to have been made by the Shans during the time of the disputed boundary. (This refers chiefly to the Upper Thoung-yin). The details of the boundary dispute and of what actually took place in connexion with it are not accessible to me. Mr. O'Reilly adjusted the matter, on the spot. Marks upon stumps are not much to be relied upon, as fires obliterate most of them. It would, however, appear that all the mature timber, in localities of the present type, was destroyed before our Government obtained control of the working.

17. Young "*Kruppel bestande,*" replacing the above, may have an extent, collectively, of three or four hundred acres. Their prospect is *nil.*

18. Separate from these, are other patches of *young timber*, belonging to type A, but of a very different class of vigour. The largest was about a mile long, by 300 to 600 yards broad. Their collective area may be two or three square miles.

Their ages are 30 to 50 years The soil bears as large a number of teak saplings as are consistent with a mixture of some forty *per cent* of young trees of other kinds, in full *peuplement* : not including, however, a number of full sized-trees, which out-top them and are retarding further development. These localities may be viewed as the beau-ideal of teak reproduction.—Finer young trees than have grown in any of our pure plantations, not yet seeding, though 40-50 feet high and 2 to 3 feet in end-girth, are as it were waiting to be let through the partial cover formed by the old trees. (principally Htouk-kyan). The only parallel I have met for these localities is on the rich alluvial deposits of the Shwé-kying.

19. There are neither mature teak trees nor stumps of teak trees, in these places. I was at a loss to account for the phenomenon which is, as I think, satisfactorily explained by Forest Ranger Moung Shwé Yé. His theory is that a concurrence of circumstances, as large production of teak-seed and very high floods may have caused the deposit of a quantity of seed, floating with other drift, in some back-water upon the inundated land, where there also chanced to have been a previous extensive windfall, or a series of poonzhos, or where the former forest was killed, as it occasionally is, by a lengthened inundation. The extinct dense localities of mature teak may have had a similar origin.

20. *B.—Sporadic teak in the dry forest of the alluvial beds.* The limited type *A*, probably owing its origin to accidental circumstances, *B*, may properly be regarded as representing the normal occurence of teak. The dry forest absorbs decidedly more of the alluvial area than the moist forest does, and throughout the dry alluvial land of the productive belt teak occurs.

21. *Mature teak* is principally evidenced by stumps, occuring to the degree of from five and six on the acre, to one on five or six acres ; also by an occasional newly girdled tree, in most cases hollow at the butt, and dividing into two or three, a little way above the ground, containing scarcely any sound timber, and chosen merely for want of better. If an ungirdled mature tree is met—which is seldom-it is not worth girdling.

22. *Young teak* occurs chiefly in the shape of crooked shoots from small stumps, times innumerable cut back by fire, struggling under shade and possessing no vigour.

23. *C.—Teak in the 'dry forest,' on sandstone hills.* The vegetation here resembles that on the more arid Prome hills : principally bamboo *(Myin-wa)*, with few trees, much stunted, in which character the teak participates, whereas, in Prome, large and fine timber frequently grows in such places.

24. *Mature timber* is evidenced, again mainly by stumps. In some parts they occur so close together that 5 to 8 may be counted on the acre, and then the greater portion evidently belong to one class, in point of the date of felling.

25. As in the case of *A*. This is said to be the doing of the Shans.

26. They left, in the readily-accessible places, nothing but exeeedingly inferior, unsound, crooked trees—trees of the class that the Forest Department has always been in the habit of passing over in Pegu, both as not worth removal, and for purpose of bearing seed, and sparing of which is expressly enjoined by the girdling rules. Of this residue, however, a large proportion has been girdled by Moung Poh Oh. A few still remain, and to them the Thit-Goungs point as the most hopeful field for the next girdling.

27. From those areas to which the havoc of the Shans did not extend, timber was gradually removed, or killed by the Forest Department, until 1868, and after that date, up to 1874, indiscriminately by Moung Poh Oh and the agents he employed.

28. Over the whole, the sandstone hills of the Thoung-yin were not rich, and are almost devoid of reproduction, they were ill-calculated to bear a heavy drain, and are now reduced to the lowest ebb. Indeed, the inferiority of what remains has been in a great measure its guarantee of immunity, and the obstacle to total extirpation.

29. The resource, under the head *C*, being of so random a character it is impossible to speak of it in connexion with area, it may, however, be said to be included within some 20 square miles.

30. *Young teak* is represented by straggling shoots from small stocks, like those of type *B*, but greatly inferior in all respects.

31. *D. Teak growing at the foot of limestone hills.* There are many chains of limestone in the Thoung-yin valley. As a rule, they display the same features as the limestone hills near Maulmain but exceptionally, when the declivities are more gradual, there is a belt of luxuriant large bamboo (Kya-thoung) containing a good intersprinkling of *pyin-ka-doh* and *mature teak.* These localities may aggregate five to six square miles in extent. They present almost the identical characteristics with the best high-hill teak-localities in Pegu.

32. The only large, straight, tall and sound standing *mature* teak timber which I saw, was in these places. About one-half of the timber had been felled or girdled, and there still remained just about sufficient to restock the ground, under energetic management, (energetic, in respect of reproduction). The girdling rules would allow of the removal of a further quota of some 40 *per cent:* about 1 tree *per* three acres.

33. The ascent is tolerably steep and in some spots the use of elephants would be precarious. When the nearness of the river-sometimes but a few hundred yards-is considered, the risk attending the extraction is the only explanation that offers itself for the comparative immunity the localities have enjoyed.

34. *Young teak* in general of the character described under *B*, but better.

35. Occasional sturdy, tall young trees, making their full height without seeding, occur, and represent the recruits to the accumulation of mature stock.

36. Intermediate classes greatly fail here, as, indeed, throughout all the classes. The tall timber is with trifling exceptions mature ; *i. e.* whether of great or small girth, its principal vigour has decayed, and its growth is practically stationary. 6 feet in girth is the regulation standard of I class timber in the Thoung-yin, but the II class timber of 4 feet 6 inches, in girth and upwards is comparatively old, and would require one to two hundred years to attain the I class standard. Numerically also it bears a small proportion to the I class (that represented by stumps, included).

37. *E.—Stunted forest on crests of limestone ridges, containing a large proportion of mature teak.* Not every limestone ridge bears this forest. But the question is immaterial.

38. The crests are scarcely accessible for men, and by elephants almost wholly inaccessible. Removal of timber is, in most instances, out of the question. During the time of the high prices, (the Russian war), the attempt was made to get out some :—the river is but a stone's-throw in many places-but although other trees were felled across the easiest lines to prevent the logs falling too deep into the crevices between the crags, the labour was unavailing, and the greater part of the timber lies there yet.

39. The trees are of imperceptibly slow growth, the timber in every way excellent, although small, and seldom straight or long.

40. *Young growth* fails altogether.

41. *F. and G. Traces of teak in the very-arid and 'Ing' forests.* As Thingan is found, a tree now and a tree then, along the banks of streams in moist and evergreen forest, so teak is found, in analogous positions in the most parched-up regions of the Thoung-yin. These trees have been removed (of late) wherever it repaid the labour. The removal is expressly forbidden by the girdling rules.

42. *Young growth* does not deserve mention.

43. Reviewing the results of the present undertaking in the order of its objects.—

44. I.—The examination shows that whatever the absolute number of trees, the individuals are distributed over the area in a given fashion.

45. The small dense localities having been completely rifled, and others greatly reduced (by the Shans) before brought under our administration, the best that remained were of the straggling type, containing sporadic stock, of the quality general in the district.

girdling was practised, it is the regulation girdled trees, rather, that have remained standing, because chosen less in accordance with the interest of the dragging-contractor than of the supply.

72. Recently girdled trees, devoid of marks, were nowhere observed, and there is less evidence of special havoc in any one season, than of a gradually sinking of standard, as year after year, choice became more restricted.

73. III. *Overcutting.* It will be necessary to fix the sense of this relative term. What it stands for may be viewed either independently, or with reference to authorized standards. Independently, it would designate a number of degrees of deterioration from the standard of perpetuity, ranging between slight reduction and total extinction. The clearness, however, of the conception, particularly as regards perpetuity, depends upon how the nature of the resource is expressed. Our resource, being of the kind it is, makes the question, viewed independently, a very complex one.—Can the resource be estimated by area:—can it be estimated by yield:—can it be transferred or compounded :—what is it essentially ? These are the most weighty questions of teak forest management in our province, and form one of the chief elements of the separate discussion instituted by the Chief Commissioner.

74. Viewed not independently, we are guided by the standard of the girdling rules. The earlier set provided for the removal, every year, of one I class tree in four, throughout each district ; the revised rules provide for the removal, annually, of all the I class trees over a sub-district. These standards do not assume a high ground ; admittedly, indeed, they occupy the lowest. It is not to the present purpose to inquire whether the ground taken was high enough for the attainment of the object, and whether the object aimed at was itself sufficiently high. It is sufficient to know that if a vague and straggling resource (I avoid the term 'forest' as prone to mislead), were overcut according to the standards authorized, it would be so the more upon every other ground that could be taken

75. In many instances the resource has been completely cut away, as well under the Shan occupancy as under our own. It may be doubted whether, under the rules authorized for felling, a considerable annual outturn from the accessible localities could have been obtained for long. The estimates made at the time of framing those rules seemed to countenance such a yield. The manner in which they where borne out in fact, in the operations of successive seasons, came under the actual observation of Mg. Poh-Oh and of him only. We may have started from the assumption that 50,000 trees were available for our purpose:—his practically choosing those trees from year to year must have shown him beyond question of doubt, in how limited a sense they were available. At first, trees could be chosen upon the conditions prescribed ; they gradually became so less and less, until every tree selected had to be taken in direct defiance of the conditions,—by abandonment of all vestige of care for the future. How matters, stood in these respects, Mg. Poh Oh recorded in tabular abstracts of 'surveys' held by him. It is ascertained that he was not present at the choice of the trees girdled, and at other operations which he professed to have personally conducted. Probably the 'surveys' in question were executed without visitation of the spots they describe.

76. Since 1868, the attempt to remain within the provisions of the rules was scarcely made. Much of the cutting was, and any future cutting must be over-cutting according to their standard, and if according to it, according to every other.

77. IV. A basis for exact check is at any time difficult to obtain, because, although we knew the number of our girdled trees, the calculation would be disturbed by the incidental factors of *natthat* and *aulay* trees. The trees are scattered over so inmense a stretch of territory that it would not repay the expenditure of time and money to have them severally accounted for, which could be done only by maintaining a local staff of well-salaried trustworthy officials. If, with the view of controlling the honesty of a contractor, he be set a limit of time within which he must clear out the forest, which limit shall be too short to allow of his getting illicitly girdled timber sufficiently seasoned to float, the experience of the Department is that contractors cannot be got to clear out the forest. Extension after extension of time has been granted, and thus we lose the check. But it is imma-

terial to pursue this subject, because the district has either to be altogether abandoned for the purpose of producing teak, or every appeal to it to cease. If there be no fresh girdling, no fresh marks could be abused, and a contractor will have no opportunity of surreptitiously girdling timber. According as prices and rates go, the seasoned timber will repay its removal. These are the circumstances refered to in para. 3. Elaborate check would cost more in preliminary investigation and subsequent organization than the subject-matter is worth.

78. The question of maintaining the Thoung-yin district as a resource in teak or of abandoning it is much too weighty a one be entered upon here. I shall merely remark that its claims to be kept up are not in so very different a category from those of the teak-producing districts of the province, at large : while the claims against, are infinitely less.

79. Supposing the district not to be abandoned, then, as ceasing to yield profits, its claim to have expenditure made upon it would depend chiefly upon past services and past privations. The district has been worked out, with great profits, during a great number of years, and nothing yet attempted in the way of conservancy. In the first respect, its turn merely came earlier than that of the other teak-producing districts in the province. In the second, it is in the same category with them.

80 The question of undertaking conservancy measures is also a very large one, and not one that falls within the scope of this special report.

81. The vigourous young localities of the exceptional character described under A., might, at a very small outlay, be released from the cover of the older trees, which, if not removed, will eventually suppress the greater number. The utility of this minor work is so evident, that few will doubt the advantage of undertaking it without delay. Here are a number of ready-made plantations, of which we can avail ourselves at a trifling cost. To fire trace these localities would be unnecessary ; a large accumulation of leaves, accidentally taking fire, would probably kill a great proportion of the trees. Except where fresh reproduction has been aimed at by special measure fire-tracing, by itself, cannot promote it greatly in the face of shade overhead and other drawbacks. The plan advocated by Dr. Slym would be productive of benefit in most parts of the Thoung-yin, and especially the young localities, *viz*, preventing fierce burns by firing the rubbish twice or oftener, if need be, in the season, before a considerable accumulation had taken place.

82. In conclusion—The Thoung-yin district has some padouk and thingan; but as these woods do not float, they cannot be removed by a river abounding in rapids. Of useful woods, occurring largely, and that float, there are the pine *(massoniana)* and Ot-aw,—apparently a species of *nauclea*,—superior in grain to the other naucleas ; and growing to great size. The pines, in the neighbour-hood of Mya-ya-wads are being extensively tapped for resin. Niches are cut into the tree so deep as barely leave wood enough for it to stand by. The resin collects in large quantities,—½ viss, at a time. Were the means of transport better (the Thoung-yin watershed has to be crossed by bullocks or elephants) the collection ought to be very renumerative ; even under existing circumstances it is surprising that so much stimulus should be found needful in order to get the commodity into the market. Were the trade successfully started, the pure pine regions in the higher hills could be utilized.

83. What little I saw of the Shan side of the river confirms the reports of the devastation perpetrated there. Not a tree that would give a serviceable piece of timber has been spared. The opinion of the Thit-goungs is that the supply cannot hold out five years longer. The running short of foreign sources of supply, as practically affecting our administration, is one of the principal items of the pending discussion alluded to above.

I have the honour to be,

Sir,

Your most obedient servant,

MAX HENRY FERRARS,

Assistant Conservator of Forests.

Out-turn from Foreign Forests will not decrease

172. If Colonel Brown is correct in his statement that the Foreign Forests on the Salween and its tributaries are exhausted, of which fact the quality of timber imported into Moulmein shows most certainly symptoms, there seems to be no fear that for years to come, the out-turn from Foreign Forests will materially decrease. The Upper Burma Forests on the Irrawaddie are reported to cover vast areas and are as yet virtually untouched. They have been examined by Agents of the Bombay Burma Trading Corporation, and it is only due to the high demands made by the King, in addition to a more expensive working of these tracts that they as yet remain unworked.

Improvements possible in the Teak Timber trade.

173. The trade in teak timber is still open to the most important improvement, by shipping converted and not only squared timber, and those Merchants who are the first to persuade their constituents to order converted timber of sizes at the prices such timber fetches at present in Foreign and Indian markets, will realize profits beyond their expectation.

I give only one item which might be saved ;— about 100,000 tons of squares are shipped during the year, these will have to be cut up and the actual loss in heartshakes and saw dust, will amount to 10-15 per cent. and calculating the freight and other incidental expenses at £3 per ton, this represents a waste of Rs. 30=£45,000 per annum in freight alone.

It cannot be very difficult to ascertain the sizes required for ship building or the manufacture of Railway carriages &c., but as yet, whenever indents or orders for converted timber have reached Burma, the demands have in most instances amounted to impossibilities.

Increase of local consumption of teak.

174. The local consumption of teak is steadily increasing, but the building of cargo boats on the Salween has fallen of, and only 15 boats were launched against 30 during 1874-75. On the Rangoon river however this trade has largely increased.

The demands of the Railway Department have nearly all been supplied.

Trade in other woods.

Timber trade in other woods.

175. This trade in timber of other kinds is mainly in the hands of private speculators, who rely for their profits more on local consumption than on export.

The exports of wood of this description is still in its infancy, and hardly worth mentioning in connection with the large exports in teak.

Exports from Rangoon.

From Rangoon the exports amounted to 5 tons only.

From Moulmein.

From Moulmein the exports are noted as follows :—

Ports.		Tons.	Value. RS.	A.	P.
United Kingdom	....	17	875	0	0
Foreign	Trieste	7	405	0	0
	Hamburg	510	25,504	0	0
	Mauritius	17	861	0	0
India	Rangoon	32	1,490	0	0
	Calcutta	58	3,281	0	0
	Madras	114	1,490	0	0
	Total....	755	33,906	0	0

The demand for Thitka and Thikadoe used mostly for tea boxes remains steady, but the exporters have largely supplied themselves from British traders.

Local consumption.

176. The local consumption of timber of other kinds is constantly rising, and the imports into Rangoon are noted during the year at 15,575 logs against 13,386 logs during 1874-75.

Necessity for artificially creating a foreign demand for timber

177. The local consumption will increase gradually and naturally, but a foreign demand, a demand for export must be artificially created and I consider, that it is the duty of Government to do this for reasons of Forest conservancy. Under the head of natural reproduction in this report, I have endeavoured to show that the hunting down of one species is incompatible with true Forest conservancy, for what is said in the case of Teak, is also true in the case of any other species. As soon however as a demand has been created for several kinds of trees, that collectively form a large proportion of the Forest *peuplement*, such Forests can be worked conservatively and with an almost certain prospect of natural reproduction and even improvement of their present status, as well as at a largely decreased cost.

178. I append here Mr. Whittall's interesting report on the Forests of the Mergui District.

Annual Report of the Mergui Division for 1875-76.

Introduction General description of the country.

The district of Mergui extends from the Kenmoung ကင်းမောင်းခြောင် Khyoung on the North to the Pakchan River on the South. To the east is the main water-shed between the Bay of Bengal and the Gulf of Siam. On the west is the sea, and the Islands of the Mergui Archipelago.

Water System.

It is watered by two main rivers, the Tenasserim and the Laynya. These with their numerous important affluents, and the Lesser Tenasserim are fed by innumerable smaller branches, most of which have their source in the mountain range which divides the English andSiamese territories. During the S. W. monsoon these streams are navigable for small boats up the very foot of the mountains. Beyond a radius of some 30 miles from the town of Tenasserim, except the forests worked for sappan wood and ebony on the Greater Tenasserim, and for Kalamet on the Lesser, the country as far as the extraction of wood is concerned, has been unexplored and untouched. Various reasons may be assigned for this, the most important being the paucity of inhabitants, the great distance of the forests from the place of consumption, the shallow water in the dry season, and the rapid current in the wet, which renders the course dangerously unsafe even for rafts. There are, however, about two months in the year, between the end of the rains and the dry season, during which there is comparatively little risk. Other smaller streams are the Palouk, the Palau, the Yayngan, the Boping, the Krathooree, and finally the larger river the Pakchan forming the southern boundary of the province. It will thus be seen that with these large rivers and their numerous branches the district is most favourable situated with regard to water communication.

Mountain System.

The whole of the district is eminently mountainous, the Tenasserim, Laynya, and Pakchan rivers, and their affluents, breaking up the country into range upon range of mountains. The two former of these rivers, not far from their mouths, take a course nearly parallel to the sea coast from which, of course, they are separated by a range of hills, on the western or outer slope of which are again a number of small streams falling into the sea. Generally speaking then the main ranges have a North and South direction parallel to the sea coast, the smaller spurs running at right angles to them and to the two main rivers. Rarely is any extent of flat land found. Where it does exsit, as at Tenasserim, Laynya, Boping, and Pakchan, it is the scene of the only rice cultivation in the district. There is also a stretch of flat land, winding round the spurs of the hills, extending from Mergui, to the confines of theTavoy district along the sea coast, and separated from it by the mangrove swamps. This does not appear to be continued below Mergui. The valleys between these mountain ranges are exceedingly narrow, in fact, narrow rivulets and precipitous hill sides form the general character of the country. Undulating land finds no place except in the neighbourhood of Maliwoon on the Pakchan.

Mangrove Swamps.

The whole of the sea coast is fringed by a belt of mangrove swamps, extending inland to a distance of sometimes 3 and 4 miles. This belt is continued up the many estuaries and rivers so far as these are under the influence of the tidal waters.

Population

The northern part of the district is more populous and contains more and larger villages than the southern. The chief towns are Mergui, Tenasserim, Palau, Laynya, Boping and Maliwoon. The inhabitants are Burmese, with Karens in the interior in the north down to the town of Tenasserim. Below this they are principally Siamese with a few Malays and Chinese. The Selones inhabit some of the Southern Islands of the Archipelago. They are a nomad race, very shy and superstitious, shifting their quarters on the slightest pretext, notably on the occasion of a few deaths occurring among their numbers, when they immediately migrate to another part. They have thus no settled place of abode, but their head quarters are at St. Mathew's and Sullivan's Islands.

General description of the Islands.

The Mergui Archipelago consists of upwards of 2000 Islands varying in size from a rock as big as a house to a large Island 200 square miles and upwards in extent. In the larger Islands the principal features of the mainland are reproduced, the same hills with a general North and South direction, the narrow valleys and the mangrove swamps. In places the coast-line of the Islands is of course more rocky, and sandy bays are common on their western faces, while the mangrove swamps are generally to be found on the eastern side. These swamps are most numerous on the Islands opposite the mouths of the Tenasserim and Laynya rivers, and along the stretch of country between them. The Islands immediately opposite Mergui and a little south of this to the most northerly mouths of the Laynya river are generally flat with large expanses of mangrove swamps, while those more out to sea are rocky. The land in the centre of these flat islands being slightly elevated should be suitable for cultivation; the people declare that the want of water is the chief cause of their not settling on them. Nevertheless of late years gardens have been formed on a few where they cultivate durian, mangosteen, plantains, cocoa and betel nuts, jackfruit, pepper and vegetables. There is an almost continuous stretch of this garden cultivation in King's Island from the shores of French Bay, across to and along the Southern portion of Fell's passage. Below King's Island the Mergui and Tavoy fishermen settle during the dry season. On a fine day a fleet of fishing boats numbering upwards of 200 may be seen outside Yay Ay Island. Wood oil has also been extracted from some parts. There cannot, however be any large trade in this industry from the Islands as yet. The Selones sometimes leave their haunts in the South of the Archipelago and venture northwards to cut rattans, collect seaslugs, birds' nests and shells and to make torches. The vegetation of King's Island is by far the finest in the whole district. There is nothing like it on the mainland; no where are there such fine trees nor so straight and true in their growth, no where such a number of trees on the acre. Many of the hill sides resemble a well stocked pine forest.

Vegetation.

The whole of the district from the summits of the hills literally down to the water's edge is one vast forest. Sometimes large expanses of pure bamboo forest are met with. Extending to some miles above the town of Tanesserim is a considerable stretch of country,lining the banks of the rivers, which all shows signs of having been at one time under toungya cultivation, which is now overgrown with bamboos. These are a different kind to those found attaining such magnificent proportions when mixed with timber forest. Beyond the paddy fields no surface is bare. The villages even are hidden under the jack, durian, mangosteen and tamarind trees, the Palmyra and cocoanut palms which are usually cultivated round the houses. From the rice cultivation, passing sometimes through a narrow piece of deserted toungya one steps at once into the forest impenetrable to any but a pedestrian from its canes, thorns, and thick underwood. The chief characteristic of this tropical forest is the absence of any species of tree which is gregarious in its habit to any considerable extent, with the exception perhaps of the oil trees, and in small patches the "liquid storax" tree; and one is struck with the great number of different kinds of trees noticed in five minutes walk through the forest. In this short time some 40 or 50 different species many be met with, most of which are of entirely different genera. Few of these trees are known in commerce. But of those which have been exported and tried, one, the thingan, has proved itself a first class wood. It was to find what amount of thingan was available, and what other valuable trees existed, that the district was ordered to be explored. It has been found that although a good deal of thingan no doubt existed, nevertheless the amount available was much less than had been expected. The thingan was found to be confined to the low flat land on the banks of streams beyond the limit of the tidal waters, always disappearing with the slopes of the hills. Even in the most favoured localities the highest proportion per acre was found to be never more than 4 trees, while the more general average was about one. The country being so very mountainous, these thingan localities are in reality simply narrow belts from 100 yards to half a mile broad, sometimes on both, generally on one side of a stream. When the source of the stream is reached this narrow belt spreads out a little all round the cane swamp in which the stream always takes

its rise. It is but seldom however, that these belts of thingan are of any great extent, and many streams have no flat land whatever on their banks.. The total area of thingan producing land seems thus very much narrowed. What the actual amount is, it is impossible to say. Years of exploration would be required to decide. What, however, has been really ascertained is that thingan occurs thus scattered all over the country, and that wherever rather more than usual existed and was readily accessible, it has been cut and removed. Up the Tenasserim rivers, Greater and Lesser, to a distance of some 30 miles from the town of that name, all the thingan has been cleared out. King's Island has a good deal of thingan producing land as it is large enough to have several streams to itself. French Bay to the north has the largest stream in the Island flowing into it called Kabeng Khyoung. Its length is some 12 miles and the usual belts of thingan are found along it. To a distance of 8 miles it has all been cut. There may be more near its source, but this has been too far off and too difficult of extraction for the Burman and Karen timber merchants. The villages of Kapha and Kathan, on the Eastern side of the Island, are the centre of another thingan tract all along and facing Fell's passage, from which it is separated first by the garden cultivation, next by the mangrove swamps. The streams flowing into this channel, although shorter than Kabeng Khyoung have all given thingan. There is now none left. Yayngan Khyoung in the Boping district, probably the largest extent of thingan producing land in the country has been swept clean of every mature tree. Kabau Khyoung, a stream flowing into the sea between Mergui and Laynya was a place reported to be rich in thingan, and which was consequently examined. It was found not to have a sound tree left. They have worked up the Laynya and Boping rivers also, but as yet, principally for boats. The township of Palau is now the worst of all for thingan. Thus, although there may be many other valuable trees among the "other woods," nevertheless the importance of thingan is second to none. It is known locally; it is known also in Madras and Calcutta, and even in England where it has been classed as second only to teak for ship building purposes. For a tree to have a name in the timber trade, and a name which stands so high on the list is most important. Its cultivation therefore should be most vigourously taken in hand. It has been shown that it does not occur in large quantities, is scattered, and that much remains.

Thingan does not reproduce itself except under accidentally favourable conditions of light. In order to cultivate it then, advantage must be taken of the fact that fellings have actually taken place on the thingan producing areas, by which some portion of the light which seems essential to the development of the seedlings, has been introduced. But this is not enough. In order to ensure a fair proportion of the seedlings attaining maturity, the hand of man must step in, or nature will reassert herself, shut out the light, and choke out the plants. *By locating the fellings of "other woods" on these same places the amount of light is still further increased.* The extention of this system of thingan cultivation depends upon the amount of "other woods" required to keep up the stock in the Timber depôt at Mergui.. Time will show what other kinds of trees will require cultivation either together with, or separate from the thingan. But of the necessity for interference with the gradually decreasing amount of thingan, and for its artificial and natural cultivation on its own merits, there can be no doubt.

Growth of Thingan Seedlings.

It is a curious fact that one seldom sees a thingan sapling among the underwood. After searching for hours in the most likely places but one or two are found. However under certain conditions the thingan seedlings are found in fair profusion and that is on the site of former fellings. In some places where thingan had been felled three or four years before all along the sides of the dragging paths, and round about the old stumps as far as the ground had been cleared by the working up of the wood, the young seedlings were found coming up thick. At Yayngan, an examination of the site where thingan had been felled gave from 2 to 37 seedlings round and about each old stump.* Where the space was more open, the number was proportionately greater. Those round the old stumps shewed signs already of having suffered from the closing in of the forest over head, while those along the paths were still flourishing, attributable no doubt to these

being still occasionally used for traffic, and the amount of space and light preserved. A Burman or Karen will always, when walking through the forest, out of pure wantonness, be incessantly using his dah, lopping off the branches which interfere with his progress, and cutting down many a sapling round which he might have gone with just as little trouble All this points to the thingan requiring a great deal of light, both for the germination of the seed and for the development of the plant. It does not seem to germinate even under the thick cover of these forests, as do the seeds of most trees requiring much protection. Hence, if any thing like cultivation of the thingan is to be taken in hand, more trees than the mature thingan alone will have to be felled. Thingan is said to seed profusely. There should be no difficulty in getting the seeds to germinate, sufficient light being all that is required, It would be a pity to cut down trees to make room for the thingan, only to be burnt and allowed to rot. When some of the "other woods" that grow in mixture with the thingan have found their level in the market, and are regularly exported they might be taken as much as possible from the thingan tracts, and thus assist the cultivation of that tree both in money and by giving space. By a little judicious management, not only the amount of thingan regenerated might be made much greater than the present crop per unit of area, but it might be more uniformly distributed over such area, and this area, by the help of transplants, increased, giving a crop at the next revolution ten times the value of the present one.

Uses of Thingan

Thingan is principally used for boats; every tree that will make a good sized boat is reserved for that purpose, as it will sell for much more as a boat than the timber would if converted into planks. Boats are hewn out on the spot, and dragged during the cold weather to some place, where during the rains there will be sufficient water to float them. A contractor however who has received advances from some of the timber merchants who own sawpits in Mergui will cut every tree he meets with up to the number that has been bargained for, irrespective of their size (provided they are not too small) and bring them in to Mergui where they are sawn into planks. Thus its only two uses here are for boats and for planks, the former being made and used all over the district, while the latter are largely used only for Mergui consumption. A few shipments have been made during the last few years to Calcutta.

Other woods Dipteraceæ.

The species and genera of the *Dipteraceæ* form the most numerous class of trees in the district, and therefore deserve the first place in the mention of "other woods" The oil trees are exceedingly numerous, and in certain localities, generally occupy the lower hills to the exclusion of other trees, while the Vaticas and the Shoreas are found most abundantly at the foot of the hills and in the thingan localities. Those that are chiefly tapped for their oil are the Kanyen-nee, the Kanyenbyân, the Siwettoung and the Sipané. The oil trees which are so extensively sawn up in Rangoon for cutch boxes and for planks for house building are here never used for these purposes. Occasionally the Siamese make boats out of them. but this is of rare occurrence except on the Pakchan river. Whilst the Burmans can get thingan and other woods almost equally as good they despise the oil trees except for their exudations. There are at least 5 or 6 probably more species of oil trees the timber of which is tolerably well adapted for any kind of rough work.

Other Dipteraceæ.

Four or five species of Kadwot, at least three of Ooban, two of Koungmhoo, one or two of Panthitya (called white thingan) and a few others all of which are believed to belong to the Vaticas, the Shoreas and the Hopeas yield good serviceable timber, and, for general purposes are second only to Thingan. While a species of Kadwot and one of Panthitya are considered almost equally as good as thingan for boat building, and others furnish planks little inferior to those obtained from that wood. The Koungmhoo makes capital boats, and has been recommended for masts. These Dipteraceæ generally are among the finest trees to be met with in the forests.

Gangau. Mesua ferrea ? Mesua pedunculata ?

The abundance and utility of Gangaw, one of the Mesuas renders this perhaps second only in importance to thingan among the valuable woods of the division. It is met with all over the country both mainland and island, and it flourishes well either in a rich loamy soil at the foot of the hills, or in one of a poorer kind

which covers the sandstone of the hill sides. It is seldom cut here, as its wood is so excessively hard, but occasionally it may be met with as house posts or rice pounders. For railway purposes it would doubtless answer admirably; and also for the many requirements in a gun carriage manufactory where hard and heavy woods are in demand, it would probably be equally well adapted. It attains a weight of from 50 to 60 feet to the first branch, and has a maximum girth of about 6 cubit.

Thitya. Gordonia. This tree is common on the hills in the Northern parts of the district, down as far as Boping. It often shows a tendency to gregariousness in its habit. Sometimes one may travel a whole day without seeing a thitya, but when one is found, others are sure to be near and perhaps it will be common on the whole hill side. Its timber is occasionally used for boats as well as for planks, but it seems to be held in much less estimation here than in many parts of Burma North of Rangoon, where its merits are better appreciated. It is one of the few ornaments of the forest, as it is crowned with a dense foliage, grows remarkably straight in the stem to a height of 60 or 70 feet and attains a maximum girth of 7 cubits. Gordonia.

There are at least 3 species of Calophyllum, indigenous to, and moderately abundant in the northern part of the district. They are occasionally met with on low flat ground, but more generally on the hill sides which appear to be their habitat. The stems of the trees are as straight as a ship's mast, with a maximum height to the first branch of about 70 feet. and a girth of about 7 cubits. These trees, the Gordonias, and the Dipteraceæ generally are the largest, straightest, and tallest trees of the forest, towering above the rest like giants in a crowd. The timber is used by the natives almost exclusively for masts for their "Kattoos" or native craft, but it is also now and then converted into house posts. All the species have been separately tried and favourably reported on for ships' masts, but the one with a reddish coloured heart wood gives by far the best and strongest timber. Calophyllum.

This is a dark, gloomy looking tree, that may be seen overtopping all the rest in almost every mangrove swamp in the country. The height to the first branch is about 40 feet and girth 4 to 5 cubits. For wharfs and marine purposes generally few woods are more admirably adapted. The piles of a wharf at Tavoy *stood* for 25 years. Those of the wooden wharf at Mergui are mostly from the same wood, but the erection is of too recent a date to confirm any thing respecting its durability. Its breaking strain is greater even than that of teak. In experiments made at Rangoon, teak broke at 870, whilst Kanazo withstood a strain of 1312 lbs. It would consequently answer well for beams and other similar purposes where strength is required and strain is to be resisted. This is either the "Sunder" wood of Bengal or nearly related to it as it is of the same family and has many qualities in common with it. Although so admirably adapted for marine uses it is not impervious to white ants and it lasts as a house post on the land but one third the time it does when used in water. Kanazo.

There are about 5 different species of Lagerstrœmia, some of which line the banks of the fresh water rivers, others grow on the plains and one species is frequently met with amidst the bamboo jungle on rising ground and on the slopes of hills. During the months of April and May their profusion of lilac coloured flowers renders them conspicuous among all the other trees of the forest. North of Rangoon the timber of these trees is much used for boats, carts, and other purposes, but here, it is almost solely reserved for the crooks or knees used in boat building. The different species vary in height and in girth, but the timber may be roughly classed as red and white, the latter being the much softer and less durable. Old trees which often attain a girth of 7 or 8 cubits, with a trunk 40 feet high, are generally hollow. They still, however, throw out many huge branches from which the knees for boat building are cut. Lagerstrœmia.

This is a species of Laurus, and is one of the few forest trees that are generally cut up in Mergui for planks. It is sometimes called "sassafras wood" and this as well as the Karaway has a strong odour similar to that wood. For indoor work, it is tolerably durable, but it is speedily destroyed by white ants if put in Mbanthin.

the ground. It would be better appreciated if made into boxes and some kinds of furniture. Its habitat is the hills, and it is found both on the Islands and on the mainland, reaching a height to the first branch of 50 feet with a girth of 6 cubits.

Karaway. This is also a species of Laurus, somewhat similar to Mhanthin. It is also cut up for planking and in habit and properties much resembles that wood. Neither of these is very abundant, but they may be found scattered about in many places.

Bassia Kanzau This one of the Bassias, and its timber, which is much used in Mergui is considered inferior to thingan only for planks and building purposes generally. It has on one or two occasions been exported to 'Calcutta, where, mixed with thingan, it realized prices between Rs. 50 and Rs. 60 per ton. The tree is very straight in its habit reaching a height of 60 feet to the first branch and a maximum girth of 6 cubits. This tree, thingan, Mhanthin, and Karaway are the four principal woods sawn up for local consumption in Mergui.

Yamanay The Gmelina and one or two species akin to it are very plentiful in some parts. It is a wood which is used principally, but not extensively, for planking. It is very light, floating even when newly felled. It would answer well for packing cases and other uses where a soft light wood is desired. It attains a height of 80 to 100 feet, and has a girth of 8 to 10 cubits.

Tsangaulay. This is a species of vitex and has a close grained and remarkably hard brownish coloured wood which is prized for the teeth of the rakes used in preparing paddy land. Occasionally house posts are made of it, which are said to be about as durable as Pyinma. Now and then, it is used for charcoal, but being very hard to cut, other woods are usually taken in preference.

Myakamung. The heart wood of this tree is one of the hardest and heaviest in the country. In many of the large boats, not a single iron nail is used, their place being taken by pegs made out of this wood. Its habitat is the hills, often in stony places, and it is readily distinguished by its white coloured bark. It is frequently crooked in the stem and has rather long straggling branches. Its height to the first branch is about 25 feet with a maxmium girth of 3 cubits and a blackish-brown heartwood of 2.

Ebenaceæ The Ebenaceæ are well represented. On the Islands most of the sandy beaches are bordered by one or two species and on the banks of many fresh water streams on the mainland are several other kinds with large edible fruits. From the latter a gum is prepared, which forms one of the laryers on the best kind of paper umbrellas used by the natives. Then again there is near and in the Sappan forests an ebony which is fully equal to that of commerce. Other species, called by the natives the white, yellow and red oukchinza make capital house posts, equalling in their durability some of the best woods in the country.

Anacardiaceæ The Syndesmus Tavoyana is tolerably abundant on some hills. The heart wood of this tree is one which is deserving of notice, being hard, close grained and much like mahogany in appearance. Belonging to the same order there is the opposite-leaved mango, also with a hard, and beautifully grained heart wood but is never found so large as in the Syndesmus. The Odina Wodier too yields a good serviceable wood, but it is soft and requires to be well seasoned. Holigarna longifolia also occurs. It gives a hard and useful wood but the trees are few and far between. Among other trees most commonly met with may be mentioned the miliusa velutina and several allied species.

Quercus Dillenia. At least six kinds of Quercus are plentiful on many of the hills. The Dillenia speciosa, and ornata are often seen. The Talaingzen, a Mimosa. The Teing net or sappan wood like the Liquidambar altingia has a locality of its own. The Tagu peing nay, artocarpus hirsuta; the Myouk Louks and other species of artocarpus. The Garcinias are represented by the Taumengoot, the Parawá, the Parajay, and

most probably by two or three more. The wild nutmegs and the Grewias are found every where and seem to affect no special soil. Several species of kiézé, a Laurus, and two of vitex are very uniformly distributed. One of the Quasias, the Samadera lucida is also abundant. Among species frequenting special localities or less numerously distributed than the above are Albizzia Lebbex, Abrus Precatorius and Adenanthera, Pavetta Indica or "Tenesserim Lance wood," the "Poison tree" and the Cerber, a munghas, Mangifera fœtida, Schleichera, Sandoricum indicum, Chestnut, Gardenia, Careya Arborea, Pterocarpus, Henslowia, Cedrela Toona, Buchanania, Carillia, Bombax Salix, Barringtonia, Spathodea Stipulata Anthrocephalus Cadambus, Ardisia and Nauclea. Of the Pinaceœ, only the Podocarpus has been met with in out of the way places. Its wood is useful for a great variety of purposes To this list the names of a vast number of different trees might be added, but with regard to some of them, although the order may be known, doubts exist as to which genus they belong. Then again there are others which most probably have never been classified and to determine which would require a professional botanist. The following list shows the number of years different woods used as house posts are said to last on land and in water.

	Land	Water.
Anyin	80	...
Kyoolin	50	15
Kiezé keechay	40	15
Kyat nan	30	10
Mygyoungoo...	30	8
Oukchinza-white	35	7
Yellow	15	5
Yellowish	15	5
Kanazo	9	25
Kabyine	25	8
Panlung	15	
Mung	8	
Pyinma	10	
Tsanganlay	10	

The splendid water system of the district points to the rivers as the natural and best means of transport for forest produce. **Communications and means of Transport.**

The difficulty in the extraction of timber consists in bringing it to the water, and this difficulty is increased by the mountainous nature of the country. To conduct timber operations with any economy in this district it is essential that the works be concentrated upon as small an area as possible. Hence the advantage of cutting many different kinds of trees and not one alone as the thingan. Otherwise the labour and cost of dragging one or two logs only into each steamlet will be enormous. In a work of exploration like this the want of roads as a means of locomotion is severely felt. For the inhabitants water is the main high road, and it is sufficient for their requirements. It is when it is a question of marching across the country that paths at least are required. Hence it is impossible to march down the Tenasserim river for example from its source to Mergui, or across a range of hills. Laden elephants if required to march up and down steep hills through thick forest without a road must be allowed their time to do it in, time which might be more profitably spent otherwise. Such a journey could be done, but it would take the whole season to do it in. Consequently the elephants have not been of much use this season. Guides are not easily procurable nor are they always of much value when they can be got, as the people do not often penetrate far into the jungle.

The whole of the Southern half of the district was severly visited by the cyclone of October 1871. Its ravages are visible from the South face of the water-shed between Tenasserim and Laynya down to the Pakchan including both the mainland and the Islands. It seems to have come chiefly from the S. E. as many hill sides facing North and West have been untouched. This is not always true, **The Cyclone visited District.**

however, for apparently the presence of a lofty hill has locally changed this direction and the wind eddying in it course has thrown down all the trees on the North and West aspects of the hills. Beyond the damage done to the standing forest, one, quite as inconvenient has been the blocking up all the paths of the country over which it has swept. Ever since the cyclone these paths have been impracticable even to village traffic and now even, four years after, the chief road is open only where the Deputy Commissioner has been able, with great difficulty, to procure a little labour *viz* from Laynya to Boping. Mr. Lee marched in 15 days from Tenasserim to Tavoy a six day's journey, of which half lay out of the cyclone visited tract, through cultivation of sorts, and was therefore without obstacles. The villagers who served as guides could not recognise where the old road lay. This will give some idea of the difficuties of getting about. The denseness of the undergrowth which has sprung up after this "coupe naturelle" is something incredible. Creepers, canes, thorns, and armed palms hold undisputed sway over the ground. Many trees have been broken off, some short, some losing only their tops ; some again with the broken half not severed, so that the tree lives. Adventitious shoots are developed giving the tree a pollarded appearance. Other trees again have not fallen to the ground but rest against another tree too firmly rooted to have suffered, bringing down with them a mass of creepers. These, having light and space suddenly thrown open to them luxuriate accordingly and add their share to the general confusion. Broken branches cannot penetrate and hang suspended in the air, and trees lie across trees in every direction. Seen from a distance an island over which the Cyclone has passed presents a most mournful appearance, the trees left standing out against the sky, conspicuous by their broken tops and branchless stems, looking like a dismantled ship. The underwood, always thick, has now no upper canopy of foliage to keep it down and within bounds. It will be an interesting question in after years to note which of the superior timber trees will force their way through this mass of rubbish and ultimately kill it down. It may be that the nature of the peuplement of the future on these parts will be quite different from that on tracts untouched by the cyclone. The area thus devastated is far too vast for man to do any thing to improve it. Given a large demand for timber with plenty of labour, and an immense amount of dry and seasoned timber could be thrown into the market. Failing this, the trees must rot and be burnt where they be lie.

The Labour question.

This is one of serious difficulty. The population is so very scanty, that labour cannot be raised for any description whatever of work except at most exhorbitant work. The people are too well off to care to work. Although the price of labour is generally supposed to be Rs. 15 a month this would at once be increased to Rs. 20 if any urgent demand arose. Even if labour could be collected, the people, Burman like, would work for two or three months, save some Rs. 30 or Rs. 40 and then go home to idle away the time until want of money drove them to work again. Fortunately, no very great number of men would be required. Ten or twelve Karens can fell and log a great number of trees, the departmental elephants could drag the logs and the rest is floating work. Provided that the works were not very scattered (as they would be if confined to thingan) the necessary labour could probably be procured, but with difficulty, and in constant dread of desertions. The Karens are by far the best men for jungle work, but they will only work in the neighbourhood of their own homes. The difficulties fo getting competent and trust-worthy men has already been felt ; all those who came at first, and got to understand what was required of them, fell off one by one on some pretext or other. After a few months rest some have volunteered again. High pay will not always tempt a Burman of these parts to leave his home. He prefers four annas a day and his independence to eight annas and being at the beck and call of another. They are not capable of any sustained effort. The best time to raise labour is just before the fishing season. In October and November the Chinese circulate among the Burman villages and hamlets, giving the men advances of Rs. 40 and Rs. 50 each to fish for them during the entire season, and they undertake to feed them all the time. This fishing is a favorite employment

of the Burmans and is large by on the increase, being one that does not require much physical labour. They go out, settle with their families on one of the Islands, each gang affecting a different fishing ground, build a bamboo house and fish during the whole dry season. The whole produce of their labour is handed over to the Chinese, who come round in their boats and take it up. The Burmans do not object, they lead an easy lounging life and their food is brought as it were to their doors. By acting in a similar manner, that is, by giving such advances at the proper time, there seems no reason why the necessary labour should not be raised for any forest work. They would have to be paid higher as their work would be of a different nature. The important point is the being warned of any impending demand for timber in time to allow of the necessary arrangements and the labour being all ready. If this be postponed until after the fishing season has commenced great difficulty will be experienced.

Organization of a Controlling Establishment.

When this district is brought under the new forest rules, a controlling establishment will be required for forest police for the collection of revenue on forest produce, major and minor, for guarding revenue stations and wood depôts, preventing illicit felling of timber, visiting the oil plantations and the cutting of canes. watching the removal of timber under permits and generally making themselves acquainted with their districts and all that goes on in them.

Timber Depôt at Mergui.

A departmental timber depôt will be required at Mergui in which to stack all the wood intended for the distant markets. It may be found expedient to send sawn and fashioned timber in preference to logs. As there is no sawing in the forests, this will naturally take place in the timber depôt. Sawing operations in the forest would never pay here, until the work over any one block of forest fell upon at least one half to two thirds of the number of mature trees upon it. Then it would be time enough to think about water power saw mills. As it is, the cost of carrying sawn scantlings from the forest to the point whence floating begins, would be much greater than that of dragging the same wood as logs. It is extremely probable that the inhabitants of Mergui, will buy and use timber of "other woods," if they find it sawn up into planks and offered for sale close by. Hitherto it has not been worth the Burman timber merchant's while to bring in any wood but thingan and one or two other kinds generally used and liked by the people. This number is much too few, and they should be shown and encouraged to use other kinds as well. The reason of this is that the majority of the woods being heavy and hard to cut, require more bamboos to float them, greater care in their transport, and more trouble to fell and drag and work up. Generally the Burman has not the capital to invest in bringing in woods not well known and which night not sell. He cannot afford to risk the loss of his outlay, nor to wait for the interest on his money. These considerations have less value to Government. It is probable then that of the wood brought to the timber depôt some will be sold locally. It should be decided to what distant markets the wood from this division is to be sent, in what quantities and how fashioned. The means of transport from Mergui to Calcutta, Rangoon, Maulmain, Penang and Singapore is naturally by steamer, but the charges for freight are very heavy. It will be difficult to sell wood cheaply in Calcutta, when the cost of freight is Rs. 25 per ton. If a very large quantity were to be sent, doubtless this would be decreased. But on the first consignments, which will be necessarily small, no profit can be expected. Sailing vessels might be employed with advantage, but those in native hands are very slow, and not always safe; nor would they serve except in the dry season. Could the cost of freight be lessened it is even possible to supply wood from here to Rangoon at a cheaper rate, than from the ordinary sources of supply to that place. Planks made of the wood oil trees have actually been sold, in times of dearth of teak for Rs. 95 per 100 for cutch boxes in Rangoon. Wood could certainly be supplied at a large profit from this division if such a price could be realized. Some woods, but not all, could be supplied at Mergui and sold cheaper than at the Rangoon rates, and in times when prices rose in Rangoon high enough to cover the cost of freight from here, any amount of timber could be thrown into the Rangoon market at a profit, if only a sufficient quantity of seasoned timber were kept in stock at Mergui.

Financial Prospects.

The financial prospects of the division depend entirely upon the development of the export trade, for the revenue from the local consumption of forest produce will not pay at least in the first years for more than the cost of the controlling establishments required. As the export trade increases so will the country be opened out and become known. There may yet be hidden treasures of forest produce, of which nothing is known nor will be known until one can get about more rapidly. Two or three woods have been found which it is hoped, will eventually turn out to be the satin wood, the gutta percha, and the zebra wood. But as the flowers have not been able to be procured and there being no botanical works of reference at hand, it is impossible to speak with any confidence as yet. The want of assistance of this kind has been seriously felt. The trees have to be identified by their leaves and bark and by sections of the wood, and these are rarely sufficient. It is sometimes not possible to get the flowers. The flowering season is not always known with certainty and one is often in time to find the flowers just over.

Nursery.

A small experimental nursery to study the development of certain woods in their first years would be invaluable. Those plants that flourished might be transplanted where wanted, and the nursery could be easily extended if it were found advisable to rear a large number of plants for transplantation.

Demarcation.

Not much demarcation would be required at first. Certain of the thingan tracts should at once be chosen and their boundaries defined. It would be quite useless having large blocks of say 100 square miles and calling them thingan reserves, for they would not be thingan reserves. It would be better to gazette the whole " district forest " from which special reserves might be formed as occasion requires.

Sources of supply and local requirements.

Except in the town of Mergui itself the inhabitants find their supplies of timber almost at their very doors. In the district there are very few planked houses and the chief *timber* used is that for house posts. Many of the woods used for this purpose have already been enumerated. The only peculiarity is that there is less labour required in cutting the wood they want on or near the banks of streams and floating it in than in penetrating a mile into the forest from their houses. This year the inhabitants of Palau, who were repairing or rebuilding their houses were floating their house posts in with the tide from an island some two or three miles out to sea and opposite their river (the mouth of which is some ten miles from the town) rather than from the forests which surrounded them; as more dragging would have been required had they cut them from here. The bamboos the people require are found in profusion all over the country and the banks of all the rivers as far as sea water penetrates are lined with the " danni " palm which supplies the thatch for their houses. In Mergui, it has already been shewn, they prefer thingan for planks, but use also Kanazo, Mhanthin and Karaway. These are brought in by the timber merchants in the log and sawn up by hand in the saw pits, of which there are thirteen in the town. It is only for boats that they will go any distance or take any trouble. The forests all round supply an inexhaustible amount of ratan and canes for the numerous purposes to which they are put. All these are close at hand. Mergui has to be supplied from a distance with thingan and other woods for planking. Wood for house posts is cut all along the sea coast. There is not the smallest chance of the people being driven in land to seek wood for this purpose. There are miles and miles of mangrove swamps about the islands and deltas formed by the mouths of the Tenasserim river, as well as many islands lying further out which contain an unlimited supply of Kyetnan the wood most commonly used in Mergui for house posts. These mangrove swamps supply also Kanazo, Kabyine, Net and Panling for house posts ; Kabyine Net Panling Soung and Pyoo are used for firewood for house consumption for the abkari establishments and the steamers. Charcoal is made or Chay (Syndesmus) and Kanyin Choung Chay (also the best wood for fosau Thabiénce (an Engenia) Anyin, Tsangaulay and Kiézé. Gunpowder is man-

factured from the Melastoma malabathricum called here Kaleik pouk pyay. Wood oil is extracted all over the country, but principally up the Laynya river. But oil plantations existing nearer Mergui are very valuable by reason of their proximity to that town. The oil trees are often found in considerable clusters, and such places are visited year after year by the same people who look upon the right to tap the trees as theirs exclusively. It is time these were surveyed and their boundaries defined in order that they may be leased out every year. The mode of extraction is too well known to need any description. The oil is not very much exported. Hitherto it has been mostly used for house consumption and for making torches. These are made all over the district and exported largely both towards Penang and towards Rangoon. Canes and rattans too are largely exported.

Services of subordinate officers

Mr. Lee, overseer, was sent down here in March 1875, as examiner of forest produce. During the rains he was out nearly all the time, but of course could not penetrate much into the jungles. In December 1875, he was permanently attached to the division. He has been found intelligent, hardworking and trustworthy. His previous knowledge of Burma and the Burmans, and his acquaintance with the wood trade generally, have rendered his services of great value. It is hoped that he will continue to be employed in this division.

Proposals for working the South Tenasserim Forests.

179. The timbers on which Mr. Whittall reports have all been locally tried, as the king of trees, the teak, is wanting in the district; and in order to bring some of them into notice I make the following proposals.

To give practical effect to the ideas above described, it would be necessary to send a ship load of timber to England and one to Calcutta.

It would be advisable to send about 600 tons of building wood and 100 tons of furniture wood to England. To Calcutta I would recommend sending 200 tons building wood, 50 tons funiture wood, 100 tons sleepers and 50 tons light wood for tea boxes and such like purposes.

Operations cannot be remunerative at first.

The cost of sending these woods to the centres of consumption would necessarily be high at first, and Government must make up their minds to a possible loss on the first year's operations.

But their cost will decrease.

The difficulty of procuring labor, and the high cost of sawing by hand, will of course be lessened when a market has been created and a steady demand has arisen for certain of the woods.

Advantage of experimenting on many different kinds of wood.

The cost of extraction will depend a great deal on the number of *different kinds* of trees which find favour. The more trees that are removed from any one area, the less is the cost of removal per tree, and we must make the best endeavours to give a great variety among the experimental timbers at first sent.

The heavier and stronger woods must be sent in squares, beams and planks the furniture woods in planks and slabs, and the light woods in thin planks, and there is little doubt that some kinds will be accepted as sleepers.

MINOR FOREST PRODUCE.

Exports in Minor forest produce.

180. The exports of Minor forest produce during the year for Rangoon and Moulmein show as follows :—

	Rangoon maunds.	Moulmein maunds.	Value.		
Cutch	2,94,200⅓	1½	18,83,288	0	0
Caoutchouc	3,079⅔	.....	2,01,188	0	0
India rubber					
Wax	623⅓	13½	39,737	0	0
Resins	3.742	.....	29,900	0	0
Vegetable oils	6,272 5/6	4,023	1,25,964	0	0
Stick Lac	11,160 5/6	333	2,65,481	0	0
Cardamoms	1,016 3/4	.....	28,666	0	0
Total Rupees...			25,74,224	0	0

As regards the shipment of various other products or exports from other harbours, my data are too unreliable to be of any pratical use.

The following quantities of seed were despatched during the year.

Dr. King. Royal Botanical Garden, Calcutta	...	3½ Maunds
Deputy Conservator of Forests, Berar ...	...	1 ,,
Conservator of Forests, Bengal	...	13½ ,,
Deputy Conservator of Forests, Assam ...	...	13½ ,,
Asst. Conservator of Forests, Chittagong ...	...	10 ,,

and about 125 lbs. of the seed of Bambusa Gigantea the Punjab, England and Madras Presidency.

Local consumption large.

181. The local consumption of Minor Forest produce is so extensive and so manifold that it is impossible to ascertain its dimensions, however, the taxation on the extraction of wood oils, and Cutch will in future years throw some light on the subject.

That in bamboos on the decrease

But may increase on account of the demand for paper manufacture

The trade in bamboos is annually decreasing, that to Rangoon has in the last five years diminished to half its former dimensions. Wooden houses are built instead of bamboo huts, and shingle roofs take more and more the place of thatched ones. Hope is however held out of a large consumption of bamboos for paper manufacture, and I am at present in correspondence with Mr. Routledge of Sunderland, regarding the subject. It seems possible that the raw material can be laid down at a central depôt for the price the manufacturer is able to pay.

Pine resins not a success.

182. 1,070 viss of pine resins were collected according to instructions received in P. W. D. Secretariat No. 4064-44 F., of 8th December 1874, at a cost of annas 12 per viss. I have as yet vainly endeavoured to sell the resin at a price covering our expenses. The resin is of the first quality, but the cost of production, on account of the difficulty of obtaining labour in the few Pine forests, is yet by far too high to make its extraction on a large scale profitable.

Gall-nuts

53 Maunds of Gall-nuts were sent to Rangoon by the Rangoon Division. They were however unsaleable and had to be destroyed.

Minor Forests produce in the South Tenasserim Division, Mr Lee's Report

183. The various Minor Forest products in the older Divisions have been reported on at various times, and it remains only to note the results of inquiries with regard to the occurrence of valuable Forest products in the South Tenasserim Division.

Gamboge &c.

In this District, there are at least 3 different species of trees, belonging to the genus Garcinia. Their yellow exudations vary in colour, quantity, and properties, but one only has any claim to be called a Gamboge tree.

The Gum-resin from one kind, the Tau Mengoot, is larger in quantity and darker and of a more glossy colour than the others ; neither wet nor dry is it so sticky, and so readily does it form an emulsion with water that the exudation on the outer bark is completely washed away by the rains. This is the tree which Dr. Mason erroneously calls the Thanatdau. This name is applied to gold leaf; and also to a tree widely differing from the Tau Mengoot.

The tree is found every where throughout the province, and it is supposed by the Siamese to be the same which yields the Gum-resin exported from their country. Not having seen the flowers, it is impossible to identify the gums but the exudation has all the properties of a good Gamboge. The maximum height of the tree to the first branch is 15 feet. The girth is rarely more than one cubit. The tree has a dense foliage and bears an edible fruit like the mangosteen.

Another kind, the Parawah, yields an exudation of a white colour, which changes to a reddish yellow on exposure to the atmosphere. This exudation contains a larger proportion of resin than the Tau Mengoot ; it is scarcely at all soluble in water, but yields to alcohol. The tree is cultivated for its edible fruit which is inferior to the mangosteen. The largest trees do not exceed three cubits in girth, and have rather short trunks. The wood is hard and close grained and is occasionally used for gun-stocks.

The third kind, the Parajay, is the largest of the Garcinias occurring in the District. Its rather copious exudation when dissolved in spirits of turpentine "affords a beautiful permanent yellow varnish for metallic surfaces."

This has been called the Gamboge tree, as well as the yellow varnish tree,

but its exudation does not form an emulsion with water, and for this and other reasons it has no claim to that name. The height of the tree to the first branch is 50 feet with a maximum girth of 5 cubits. Its fruit is edible, but owing to its acidity, is seldom eaten except in a green state, being generally steeped in salt and water for some days and used as a pickle.

The Tau Mengoot is the Gamboge tree of these Forests ; and the exudations of this tree alone are entitled to the name of Gamboge.

The trees and creepers producing Caoutchouc in the Southern parts of the Province are not nearly so abundant as is generally supposed. In the Mangrove swamps which occupy such a large extent of territory on the sea coast, and border many of the rivers within the range of Tidal *salt* waters, they are rarely if ever met with. A hilly country like this is not their habitat, and in numerous other ports inland, the soil is too sandy a nature to favor then growth. They flourish best in a moist loamy soil where there is plenty of shade, and these two conditions are rarely met with here together to any large extent. Caoutchouc.

That both trees and creepers producing Caoutchouc grow all over the Province is undoubted, but in such sparingly small areas as to preclude any prospect of a very extensive trade being profitably developed in this article.

The Chavannessia esculenta and the Taliennoe grow much more sparingly here than in many parts North of Rangoon but the Talienzoop which seems closely allied to the Taliennoe furnishes a good supply of milk, yielding a capital India rubber.

The scarcity of elephant fodder indicates the scarcity of Ficus trees. These trees being exceedingly rare, so much so that frequently in a day's march not a single one of the numerous species is met with.

Numerous other trees, including a whole host belonging to the Bread fruit order, yield milky exudations, but for the purpose of making India rubber none of them will bear comparison with the Chavannessia esculenta, the Talienzoop, or the Taliennoe.

These creepers are the India rubber producing plants of the Southern parts of the Province, the Talienzoop being the most abundant, yielding an equal or more copious exudation than either of the others and producing an India rubber in no way inferior to them.

Passing on from these creepers a large Forest tree called Pinlaybyin deserves notice. It is exceedingly abundant on the islands and yields a copious milky exudation. The tree is known to belong to the Sapodilla order, the same as the Gutta Percha tree, but a doubt exists as to whether it is a species of Isonandra or Bassia which a little further investigation will disclose.

The trees, yielding these substances, form a rather large per centage of the Forest growth in this Province, the resiniferous ones in particular holding prominent place amongst them. In the Leguminous order there are two or three which furnish gums readily soluble in water, but one in particular, "the Dalinsinban" yields a fair supply of a good adhesive substance which is quite equal to the gum in ordinary use. Gums, Gum-resins &c.

The gum-resins include the Garcinias alluded to elsewhere, the Odina Wodier, a number of other trees and a large class of milk producing plants. A few of the latter are used and none of them are exported.

Competent judges in England frequently experience difficulty in identifying gums and other substances submitted to them. This is illustrated in the case of the Odina Wodier.

Dr. Cooke, in his recent publication, expresses a doubt whether 3 different looking gum-resins come from the same tree, the Odina Wodier. His description however leaves no doubt but that they are all three from that tree.

If a narrow cut be made in the bark a white substance exudes which in about two days becomes hard and clear and retains its white colour. But if the bark and wood be cut so as to form a receptacle the same as in the oil trees, the gum-resin will accumulate in this and in the course of a short time turn as black as pitch and have a strong ammoniacal smell.

If this black substance is dried in a lump it still retains its black colour but if instead of doing this it is stretched out in a thin layer, or wound like a thread around two bamboos at a little distance apart, the gum-resin undergoes a bleach-

ing process which turns it from a black to a clear white substance, its original colour.

The outward bark of some trees contains Tannic acid which would be likely to discolor some exudations, but here is an instance where the wood of the tree seems to have a somewhat similar effect.

A creeper named "Kambaline" by the natives, yields an exudation *apparently* identical with that of the Buteas and the Padouk. This exudation looks much like gum kino and is believed to have similar properties, but chemical tests may show a closer relationship with Dragon's blood. A few tests only are necessary to settle this point.

A large number of trees belonging to the Malay camphor order, which is much more numerously represented in the Forests here, than that of any other order, furnish various resins in abundance.

A species of "Ooban" and one of "Kadoot" yield resins which if dissolved in alcohol give a clear crystal varnish. Other species of these trees, those of Thingan, Khoung Mhoo, one species of Kanyin Cheong Chay and numerous others abound in resin.

The Calophyllums yield exudations profusely and a very considerable quantity might be collected. "This resinous substance has been erroneously called the Tacamahaca of the old Pharmacologists and is said to be a useful application to indolent ulcers and also to sore eyes." It is said to have been used as a lubricatory but with what success it is not known.

The Gangau (Mesua) yields a somewhat similar substance which is mildly odoriferous. Candles of a very crude description have been made out of it by the natives and they also use the substance medicinally.

For years past wood oil has been exported from Rangoon to England and in a refined state the substance is identical in its properties, or nearly so, with the Balsam of Copaiba and is said to be used for that substance. Here is a tree called Kanyin Cheong Chay which yields an oleo-resin of a yellowish color, apparently the Copaiba itself.

Liquid amber altingia

Near Letpanthoung on the lesser Tenasserim there is quite a little Forest of these trees with but very few others amidst them.

They grow in a rich loamy soil where in the monsoon weather the trunks are a foot or eighteen inches under water. The maximum height to the first branch is about forty feet with a circumference of three cubits. The bark which is conspicuously white and the dense foliage which is a paler green than that of the surrounding trees, render them readily distinguishable even at a distance.

It is only for a month or two after the annual fires in March and April that any storax can be obtained. Even during this short period, the yield is very inconsiderable, only an ounce being collected in several days.

There are however two or more methods of obtaining the storax by artificial means. One is to take off the bark from one side of the tree, subject it to fumigation, then scrape off the inner bark, place it in strong horse hair bags, and apply pressure till the storax ceases to issue. After this hot water is thrown on the bags and they are again submitted to pressure, by which time the greater portion of the resin will have been extracted.

The other method of obtaining it is to boil the inner bark over a brisk fire during which time much of the resin comes to the surface and is skimmed off.

To ensure the whole being extracted it is then submitted to pressure in horse hair bags the same as in the preceding process.

The way the natives procure it here is to cut the bark of the tree and scrape off the Balsam with a dah. The exudation is naturally clear but it was found that by adopting this method the iron dah turned it a black colour. A very small quantity collected with a scraper made out of the wood of the tree was viscous and colorless.

The natives use the Balsam medicinally but as very little can be procured it commands a high price; being sold even in the crude state in which it is collected for its own weight in silver.

Tannin and Dyes.

The bark of two and the fruit of one species of mangrove, furnish a good per centage of tannin. These trees being situated on the sea coast and on the banks

of tidal rivers the cost of collecting these substances would be excessively trifling.

The high freight on such bulky articles is a draw-back to their exportation.

The Sappan wood, occupies the foremost place among the dyes. Next follow the Padouk, and the Syndesmus Tavoyana. The red Saunders wood yielded by the former is well known. The latter gives, with different mordants dyes of a bright and permanent nature.

Three species of Indigo are indigenous. Three species also of Morinda are found in the Forest, and the Karens cultivate a fourth kind for their own use. The yellow dye from the flowers of the Buteas is not used.

The Heart wood of the Jack fruit tree and the leaves of the Douyat yield the yellow dyes for the Phoongyee garments. The fruits of Terminalia Chebula and of Semecarpus Anacardium as well as those of several other trees, afford black dyes. The former is used for making native ink but it is probably not very permanent.

The substances most generally used by the natives for dyes are Lac, the seeds of the Bisca Orellana and the powder which covers the capsules of the Mallotus Phillippensis. The former and the latter are imported and the Bisca Orellana is cultivated.

No large quantity of Lac has ever been obtained in this District, although it is said to occur abundantly in Siam. On one or two occasions some very small pieces have been collected on the hills, South of Tenasserim and it was rumoured that some had also been found at Tagoo but on enquiry the report proved incorrect. Lac.

The Acacia Catechu which yields the Cutch of Upper Burma is not indigenous here. From two widely different trees, however, a very good per centage has been obtained of a substance which appears identical with the Cutch of Commerce. Catechu

Not yet having seen the flowers of these trees it is impossible to state whether either of them is the same as that which furnishes the Cutch of Ceylon.

The Sappan Forest is very far up the larger Tenasserim and although within a very short distance of Tavoy the convenience of water communication throws this dye wood through the Mergui market. Sappan wood

Owing to rapidity of the current in the river it is necessary to bring the wood down on rafts. This year fifteen of these arrived in Mergui with Sappan wood weighing seventy thousand (70,000) viss.

The usual selling rate in Mergui is from Rs. 5 to Rs. 5-8-0 per 100 viss and the markets to which it is usually sent are Calcutta and Singapore. The Chinese are the principal traders in it and it is seldom cut except to order, when advances are made to responsible Burmans who bind themselves to deliever a certain quantity at a certain rate.

Ebony in small quantities finds its way into the market, accompanying the Sappan wood. Ebony

The majority is of inferior quantity, selected pieces only being perhaps equal to the Ebony found in English markets. It fetches Rs. 20 per 100 viss in Mergui and only Rs. 16 in Europe which is hardly encouraging.

Of the numerous varities of cane only two, the "white" and the "black" are exported, the former being considered slightly superior in strength and durability. Various kinds are used locally in house building, some in boat uses and others in raft making or in place of ropes. Canes and Fibrous plants

The fibrous plants are tolerably abundant in many parts of the Province. The inner bark of two rather large trees and that of a shrub furnish strong and durable fibres known respectively as Shaw-nee, Shaw-pyoo, and Thinbon or Lanyashaw. From these substances almost all the ropes and cordage used in the country are manufactured. When a choice can be made the Shaw-nee is most generally selected as it is clean when stripped from the tree, and only requires to be dried a little preparatory to using it. The Shaw-pyoo is a strong and more durable fibre, but it requires to be well washed and dried before it can be used. The Lanyashaw is moderately strong but requires a little more labour to procure it, so is less generally used.

Various creepers having special applications are frequently used for a variety of purposes. The "Kambaline" for instance, which is very tough is used principally in rafting.

"Kaleingtee" is used for tying the oars in Burmese boats. "Laboo" finds an application in tying the frame-work of large boats, "Lawoon" in Bamboo house building; and from "Nwaylah" a coarse rope is made which is used in boats.

Odoriferous Woods.

Toung-than-gyee. This tree yields an odoriferous wood which is used here as a cosmetic as generally as the "Thanat-kah" is used for the same purpose in the Northern parts of Burma.

In its green state the wood is white and inodorous but after being felled and allowed to remain in the Forest for about three years the odor, like that of Kalamet, becomes developed and the wood changes from white to straw color.

The wood if placed in water for a short time has an offensive smell but after a few days exposure to the sun it regains its odour apparently undeteriorated. The tree is never seen within the range of tidal *salt* waters but is frequently met with not far from the banks of fresh water rivers or on the plains a little more inland.

Its maximum girth is about three cubits with a trunk about twenty feet high. The wood has a close grain, works up easily and looks remarkably well when made into furniture even shortly after being felled.

Another species, sparingly met with on the sea coast is also used as a cosmetic. Its variety prevents its general application but it is equal in value to the Toung-than-gyee.

Aloes wood or Eagle wood.

This wood formerly supposed to be known only to the Selungs is now sometimes exported by the Burmese. The leaves are small, alternate, wholly glabrous, unprominently veined, and much like some of the Calophyllums. It has a dense foliage a straight trunk of 30 feet and a maximum girth of 6 cubits, the wood being white and remarkably soft.

Some of the odoriferous wood is formed like the Ebony when the tree has received some injury, but the largest quantity is obtained after the tree has been felled and allowed to rot in the Forest for about three years, the time varying according to the size and the situation which it occupies.

When in this decayed state, the tree is cut up into fragments and the odorifirous wood is met with, irregularly distributed, of various shapes and sizes.

The amount obtained from a large tree varies from a quarter to about three viss but in a few rare instances as much as three times the latter amount is found.

There are two kinds of this odoriferous wood, one, of a whitish colour, lighter, more spongy, and more odoriferous, is used as a cosmetic; the other, of a reddish colour, harder, and more valuable, being used medicinally. The Mergui rate varies from Rs. 4 to Rs. 13 per viss.

Kalamet. This odoriferous wood is known only to grow at a place high up the Thaingcone Kheong and not far from the Siamese boundary.

The trees in a green state are odorless and, like Toung-than-gyee would have to be cut and left in the Forest for about three years before the odour became developed. But owing to the roots of the tree not taking firm hold of the ground (they are said to be lateral and mostly run along the surface of it) the trees are blown down by heavy storms so that the wood can always be met with in various stages of decay.

The odoriferous wood is not confined to the heart wood or yet like the Eagle wood irregularly distributed, as the whole of the trunk as well as the branches are odoriferous. Although rather heavy, the logs are buoyant in water, otherwise the cost of extracting it from places where there are only narrow shallow creeks would be materially increased. There are two kinds the white and the red, the latter being considered the best.

From descriptions the trees are probably somewhat gregarious in their habit and are only met with on the hill sides in a soil where stones are abundant. They grow to a large size, the maximum height of the trunk being about sixty feet and the girth about 6 cubits. The bazaar rate of this wood, depending much on the amount of supply, varies very considerably, being sometimes as low as Rs. 10 and at other times as high as Rs. 25 per hundred viss.

Dandakoo.

Dandakoo white and red. Both these odoriferous woods are the produce of trees which grow in the crevices of high rocky places. The odoriferous wood is found in the hollow trunks of old trees that have reached their maximum girth of 2 or 3 cubits. It is not met with in very large pieces and as it grows in almost

inaccessible places there is not a very large quantity collected. The wood is used occasionally as a cosmetic but more generally as a medicine. The market rate varies from Rs. 2 per viss and upwards.

It was always supposed that these tubercles were the produce of a creeper, but this is not the case. Cosmetic tubercles.

The tree which actually does produce them is called by the natives "Pyoung Gyouk" two species of which have been met with. It is not even the "Kathit" which some people have supposed it to be but is most probably an Erythrina.

Toung-lung-gyaw. The soft wood of this tree is almost odorless in its green state and but very faintly so when dry. The roots however when burned throw out a most delightful fragrance which in the jungle is perceptible at a distance of upwards of a mile. Toung-lung-gyaw.

The flowers are also slightly odoriferous and are used as a cosmetic powder and for stuffing pillows. Nearly all the parts of the tree are said to have medicinal properties. The tree has a girth of about two cubits and a trunk of about fifteen feet high with a very soft wood which is but rarely used.

Nathanee. This name is always given by vendors and native practitioners to the heartwood of a species of Padouk (Pterocarpus). It is said to have refrigerent properties and is also used otherwise medicinally. Nathanee

Oo-ba-ta-gah. There are two creepers under this name which the natives distinguish as male and female. They have both a mild and pleasant odor but the latter is considered by far the best. They are both used as cosmetics and refrigerents. The bazaar rate is usually about Rs. 2 per viss. Oo-ba-ta-gah

Karraway and Mhan-thin. These are large timber trees belonging to the Lauraceæ and their light and rather soft woods are much used here for house building purposes. Every part of both these trees has an odor much similar to Sassafras but that of the latter is much more intense. Karraway and Mhan-thin.

Both edible and lamp oils are rather extensively manufactured both in Mergui and in one or two places in the interior but there are still numerous oil seeds which rot in the Forests unutilized. The edible oil is principally made from the seeds of the Sesamum plant which of course is cultivated, but one kind obtained from the seeds of a large Forest tree belonging to the Sapodilla order is said to be fully equal to it in quality Edible and lamp oils

This tree is locally called "Pinlay-byin" and is exceedingly abundant on the islands. Another oil is also expressed from the seeds of Bassia longifolia which is a large Forest tree of the same order as the above. By some natives this oil is preferred even to that of Sesamum as it is said to be "lighter," thinner and more watery when cooked, but has a slightly peculiar odor which is not particularly savory to every palate. Both these trees are said to yield fruits once only in three years. An edible oil is also occasionally expressed from the seeds of a tree called by the natives "Letpyaw", which grows abundantly in some swampy places and yields a plentiful supply of a large sized fruit.

For medicinal uses only an oil is made from one of the Pongamias and for burning purposes the Cerbera Marghas occupies only a low place in the scale. The latter oil if taken internally when newly made is an emetic and a drastic purgative but it is said to be edible after being kept for about three years. Lindley discribes it as poisonous. Fish die speedily after eating the seeds and several instances have been witnessed in which these poisoned fish, after being cooked and eaten have produced virulent vomiting. Lindley also speaks of the leaves and bark being so similar to senna in their action that they are substituted for it in Java.

The way that many of these oils is extracted is simple but efficient. The seeds are dried by natural or by artificial heat, then pounded in a rice mortar and put in a coarse bag or cloth which is placed in a chatty the bottom of which has numerous holes in it. This chatty is then placed on the top of another containing water and both of them put on a fire The steam from the lower ascends into the upper one and softens the powdered seeds. After remaining a sufficient length of time the meal is taken out and put in a bag made of reeds, which tapers to a point at the bottom, this bag is then placed between two boards and pressure applied until all the oil is extracted.

Wood oil.

The oil trees are met with in numerous places throughout the Province and are often seen in clusters on low hills with scarcely any other trees in their midst. Large quantities of these oils are annually collected and a profitable trade is carried on in torches.

There are probably over six species of trees which yield oil but the largest quantity is procured from the "See Wettoung" and the "Kanyinnee." The "Eng" tree which furnishes so much oil in the vicinity of Rangoon yields scarcely any here and is consequently never cut for the purpose of extracting it.

There being no duty on the export of torches no reliable data can be given of the actual quantity exported. All therefore that can be said is that few of the regular steamers leave the port without torches, that kattoo and other native crafts take away large quantities and that a number of people are almost solely occupied in collecting oil and making torches.

Bees wax and honey

The export trade in wax, formerely considerable, is now much reduced. By far the largest quantity is brought into the market by the Selungs who collect it on many of the numerous islands.

Many bees nests not producing any honey at all, or very little, the amount of honey brought into the market is small.

The bazaar rate for wax varies from Rs. 3-8-0 to Rs. 4-8-0 per viss and that of honey from Rs. 7 to Rs. 10 per 20 viss.

Cardamoms

In the Southern part of the Province the Cardamom plant is rarely seen except in a few instances where it is sparingly cultivated. On the mainland the vicinity of Palaw seems to be its most Southern limit. At a place called Palah near Palaw, the Karens collect and bring into the Mergui market considerable quantities every year. The selling rate varies from annas twelve to rupees one per viss.

Birds nests.

Birds nests are collected by the Selungs principally from the more Southern islands of the Mergui Archipelago, but the Moscos and Tavoy island are also very valuable, and the leases for collecting the nests are eagerly sought. Out of the four kinds which are met with the best sells in Mergui for double its weight in silver. The usual rate, however for a fair quality is about Rs. 130 per viss.

Collection specimens of wood.

184. Mr. Whittall, the officer in charge of the South Tenasserim Division and Mr. Lee have traversed large portions of the Division and made a valuable collection of woods and Minor Forest produce which is kept at Mergui. Another collection of woods I keep at my house, another is kept at the depôt, and various collections of gums and resins are kept at different places.

Should be placed in a central museum.

It is a matter of regret that as yet we have no Central museum. The building of one was sanctioned during the year, but the Provincial allotment in the Public Works Department being insufficient it could not be built.

DEPARTMENTAL REMARKS.

Deaths

185. I regret that I have to note the deaths of two officers; Messrs. Watters and Elsner. Both fell victims to cholera.

Health of Department

186. The general health of the Officers of the Department has been far from satisfactory: Messrs. Ferrars, Oliver, Anstruther and Mr. Hough have suffered from serious attacks of jungle fever, Messrs. Slym and Popert from dysentry, Mr. Dansey had to be transferred during the year on account of ill health as has been already reported in last year's annual. Mr. Stratford left on sick leave for England.

Several casualties and cases of illness have also been reported amongst the Subordinates.

One of the deceased was an old servant of Government, Mr. Rozario who died at Kadoe.

Changes in Department controlling staff.

187. Messrs. Wild and Whittall and the late Mr. Watters, Assistant Conservators were during the year transferred to Burma, and Messrs. Nisbet and Carter, Supernumerary Assistant Conservators were sent out from Europe.

The late Captain Douglas, Deputy Conservator of Forests, was transferred to Punjab.

Assistant Conservator of Forests, Moung Poh Oh, was dismissed during the year.

188. Two Overseers and one Clerk had to be dismissed for drunkenness, five subordinates for dishonesty, bribery or extortion, and one on account of general unfitness. This is exceedingly unstisfactory and it is but just to note those executive surbordinates with whom Divisional officers have declared themselves satisfied :— Subordinates

Moung Kellay, Moung Way, Mr. Walsh, and Moung Yan Shin. The staff of clerks work on the whole satisfactorily.

189. I am exceedingly satisfied with the work done and the interest displayed by all Controlling officers and beg leave particularly to mention the services of Messrs. Slym, Strettell, Wild, Whittall, Ferrars and Popert. The junior officers promise to be valuable servants of the State. Services of Forest officers.

Mr. Buchanan the Superintendent of the Conservator's office has fulfilled his duties in a most satisfactory way and in Mr. Alimark in charge of the Rangoon depôt and Agency work, I recognize a useful and most indefatigable workman.

I cannot conclude these remarks without my acknowledgements for the generally cordial co-operation of Civil officers, and the evident interest they take in Forest matters, and my more special thanks are due to Mr. Hough, for his valuable services with the demarcation staff.

190. I examined during the year all Forest offices in the Province, and twice those of Prome and Tharrawaddie. Inspections.

The system of record keeping has been changed throughout the Province during the year, and the bulky files such as "woods other than teak" containing letters on various subjects have been broken up into cases consisting of letters relating to one subject only, a measure which facilitates office work exceedingly.

I visited during the year the Forests of Tharrawaddie and Rangoon Divisions, made a short tour into the Forest from Prome, marched through the Kaw-leya Binedah and lower Yainway Forest to Tounghoo and returned by land. I went also to Tavoy and Mergui, to establish the South Tenasserim Division.

191. Mr. Strettell published during the year a book, "The Ficus Elastica" in Upper Burma, this being a narrative of his journey in 1874. Publication.

BERTHOLD RIBBENTROP,

Officiating Conservator of Forests,

British Burma.

STATEMENTS.

Statement I

FOREST DEPARTMENT, BRITISH BURMA.

Extract from the Forest Day Books of the Officers of the Forest Department, Tharrawaddie Division, Shewing the number of Teak, Pynkadoe, and Cutch trees counted during 1875-76.

Name of Divisions.	Name of Forest Tract.	Year of Survey.	By whom Surveyed.	No. of tract Surveyed	Trees counted in the Survey. Teak. I	II	III	IV	Teak.	Pynkadoe.	Area Surveyed. Length of Tract.	Width.	Area in Acres.	Total of first three Classes on 100 acres.	Number of trees in 100 acres. Cutch.	Pynkadoe.	Class of Forests.	Remarks.
	THONGZAI.																	
THARRAWADDIE.	Yaygyee and Namapouk Choung	1876	J. W. Oliver Esq.	1	6	48	82	110	...	...	5,280	66	8	1,700				
	Namapouk and Namapya Choung	...	Do.	2	...	...	...	...	...	...	10,560	66	16					
	Namapya Watershed to Namapouk Choung ...	...	Do.	3	5	17	15	15	...	...	5,280	66	8	462				
	Namapouk, Yaygyee and Kadinmyoung Choungs ...	...	Do.	4	13	60	88	163	...	...	10,560	66	16	1,006				
	Nyoung to Goon-yin Choung ...	...	Do.	5	2	7	25	90	...	...	5,280	66	8	425				
	Thaybayloo Choung North East direction ...	...	Do.	6	3	18	22	44	...	...	5,280	66	8	537				
	Beeling Toung Choung at mouth Tapola Choung along ridge north of Tapola Choung and along right bank of the same Choung ...	...	Do.	7	6	15	24	10	...	...	5,280	66	8	562				
	Tapola Choung to watershed of Toung and Tapola Choungs ...	...	Do.	8	22	36	115	137	...	...	10,560	66	16	1,081				
					57	201	371	569	...	...	58,080	...	88	5,773				
	Nyoung binzin Choung ...	...	J. Nisbet Esq.	1	11	29	88	164	...	...	4,290	120	11·8	1,084				
	Nyesee, Wanet, Pyoo and Kyesee Choungs ...	...	Do.	2	13	19	142	486	...	...	9,073	120	25·0	696				
	Way Village to Wanet Choung.	...	Do.	3	11	14	268	478	...	...	7,316	120	22·15	1,322				
	Alang Toung across Singwet and Thaloom Choungs, stopping at Wayloo Choung ...	...	Do.	4	15	61	199	173	...	...	11,971	120	33	833				
					50	123	697	1,301	...	...	32,650	...	91·23	3,935				

Statement

FOREST DEPARTMENT,

Extract from the Forest Day-Books of Mr. Ferrars, Assistant Conservator of Forests, Salween Division

Locality.	Size and Shape	Ground		In chief			
		Configuration and Subsoil	Nature of Surface.	Consistence	Kind	Isolated, in a single file.	Sporadic, in a few directions
							WA-THAY
1. direction	3½ miles long, 2 miles wide.	Hilly	Arid.	Full	Dry forest without bamboo.		.
2 in the above	A patch 600 by 500 feet.	Same	Same.	Same.	Same.	...	...
3. continue	4 miles long, 2½ miles wide.	Level alluvial.	Same.	Open.	Wa-gouk chiefly	...	..
4 in the above	A patch 1500 by 1000	Same	...	Same.	...	...	.
							WA
5. direction	4 miles long, 1 mile wide.	Level alluvial.	Arid	Full.	Dry forest without bamboo.	...	...
6. in the above	A patch 1000 by 500 feet.	Same.	Same.	Same.	Same.	...	STILL, REMAIN.
7. continue	7 miles long, 1 mile wide.	Gentle hills	Arid.	Open.	Wa-gouk few trees.	...	...
8. in the above	A patch 700 by 600	...	...	...	...	...	STILL
							BAU-THA-
9. direction	3 miles long, 1½ mile wide.	Gentle hills	Arid.	Open.	Dry forest with Wa-gouk.	A FEW.	...
10. continue	2 miles long, 1 mile wide.	Same	Same.	Same.	Same.	...	...
11. in the above	A patch 600 by 400 feet.	...	...	...	...	...	...
12. continue	2½ miles long, 1½ mile wide.	Same.	Same.	Same.	With Myin-wa	...	...
13. in the above	A patch 8000 by 3000 feet.	Same.	Same.	Same.	Same.	...	...
14. continue	3 miles long, 2 miles wide.	Level alluvial.	Same.	Same.	Dry forest with Wah-gouk.	A FEW.	...
15. continue	2 miles long, 1½ mile wide.	Same.	Same.	Same.	Same.	...	...
							BAU-THA-
16. direction	3 miles long, 2 miles wide.	Hilly.	Arid.	Open.	Myin-wa occasionally Pymma and moist forest near streams.	A FEW	...

1 A.

BRITISH BURMA.

shewing the results of his valuation surveys, in the Thoung-yeen Forests, of the in 1875-76.

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			Remarks.
Consistence.			Kind.	Consistence.	Kind.	Contingent.	
Intersprinkled, without limited direction.	Forming considerable feature of *futaie*.	Forming principal feature of *futaie*.					
S. O.							
...	...	...	...	...	...	...	Throughout these notes, such entries as ½ mile long by 150 yards wide implies that the forest described is bounded, at the distances in question, by forest not relevant to the present inquiry. Only the teak-producing parts of the (productive belt,) with its interruptions, where least broken, are noticed. An entry in small capitals under mature teak, means present resources. And in italics, former resources—
...	STILL.	...	Sound long straight round.	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	Full.	Strong Vigorous.	Good mixture	
THAY P M.							
...	...	...	...	...	...	...	
..	...	*Former.*	...	Filling out between the old trees.	Various.	Various.	Girdling 74 & 72.
...	...	...	...	...	...	...	
...	...	*Former.*	...	Same.	Same.	Same.	
LOO S. Y							
	...	...	Worthless.	...	...	...	
...	...	...	...	...	...	...	
STILL IN QUANTITY FEW STUMPS	...	...	Straight round long sound.	...	...	...	Girdling in, 72 of a few.
...	...	...	...	...	...	...	
...	Still in quantity.	...	...	...	...	...	Girdling in, 72 of a few.
...	...	...	Bad.	...	...	...	
...	...	...	...	...	...	...	
LOO S. O.							
...	...	...	Worthless.	...	...	...	

Statement

Locality.	Size and Shape.	Ground.		In Chief.			
		Configuration and Subsoil.	Nature of Surface.	Consistence.	Kind	Isolated, in a single file.	Sporadic, in a few directions.
							BAU-THA-LOO
17. continue	2 miles long, 1½ mile wide.	Same.	Same.	Same.	Myinma occasionally Pymma and moist forest near streams.	...	...
18. in the above	A patch 700 by 200 feet.	Same.	Same.	Same.	Same.	...	...
19 continue	3½ miles long, 1½ mile wide.	Same.	Same.	Same.	Same.	...	...
20 in the above	A patch 900 by 300.	Same.	Same.	Same.	.....	...	STILL REMAIN.
							BAU-THA-
21 direction	1 mile long, ½ mile wide.	Gentle hills sandy.	Arid.	Open.	Eng	...	...
22. continuation	½ mile long, 350 yards wide.	Same.	Same.	Same.	Wa-gouk	...	A FEW.
23. in the above	A patch 450 by 300 feet.	Same.	Same.	Same.	Same.	...	...
24. continue	½ mile long, 600 yards wide.	Level alluvial	Same.	Same.	Same.	...	...
25 continue	1½ mile long, 750 yards wide.	Hilly.	Same.	Same.	Same.	...	...
26. in the above	A patch 350 by 230 feet.	Same.	Same.	Same.	Same.	...	...
27 continue	2 miles long, ½ mile wide.	Same.	Same.	Same.	Same.	...	...
28. in the above	A patch 600 by 250 feet	Same.	Same.	Same.	Same.	...	...
							BAU-LAU-
29. continue	⅓ mile long, 150 yards wide.	Level alluvial.	Parched.	Morderate full	Dry forest with little bamboo.	...	...
30. in the above	A patch 240 by 50 feet.	Same.	Same.	Same.	Same.	...	...
31. continuation	½ mile long, 350 yards wide.	Lime-stone hills.	Arid.	Open.	Wa-gouk.	A FEW.	...
32. continue	1 mile long, 670 yards wide.	Undulating laterite.	Very arid.	Full.	"Eng"	...	...
33. continue	1 mile long, 800 yards wide.	Hilly limestone.	Arid.	Same.	Dry forest without bamboo.	A FEW.	...
34. in the above	A patch 200 by 100 feet.	Same.	Same.	Same.	Same.	...	...
35 continue	1⅓ miles long, 900 yards wide.	Level alluvial.	Arid.	Open.	Kye-kat with trees of dry forest.	...	...
36. in the above	A patch 800 by 600 feet.	Same.	Same.	Same.	.....	...	...

1 A.—*(Continued.)*

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			Remarks.
Consistence.			Kind.	Consistence.	Kind.	Contingent.	
Intersprinkled, without limited direction.	Forming considerable feature of *futaie.*	Forming principal feature of *futaie.*					
S O.—(*Continued.*)							
...	...	...	...	...	...	...	
STILL MANY.	*Formerly.*	...	Worthless.	...	...	...	
...	...	...	...	...	...	...	
Were formerly.	...	...	Same.	...	...	...	Girdling of 66.
LOO P. M.							
...	...	...	...	...	...	...	
...	...	...	Useless.	...	...	...	
STILL	*Originally.*	...	Do.	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
STILL	*originally.*	...	Same.	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	Full.	Straight long healthy.	Tolerably favorable.	
LOO P. M. C.							
...	...	...	...	...	...	...	
...	...	...	...	Full.	Vigorous young stock.	Favorable.	
...	...	...	Sound and straight.	...	...	...	
...	...	...	...	...	...	...	
...	...	...	Same.	...	...	...	
...	...	...	...	Same.	Same.	Same.	
...	...	...	...	...	...	...	
...	STILL REMAIN	*formerly.*	Almost useless.	...	...	...	

Statement

Locality.	Size and Shape.	Ground.		In chief.			
		Configuration and Subsoil.	Nature of Surface.	Consistence.	Kind.	Isolated, in a single file.	Sporadic, in a few direction.
							YAY-BOO
37. both sides	6 miles long, 3 miles wide	Level plateau.	Arid.	Open.	Dry forest without bamboo. Trees high large and sound.	...	...
38. in the above	a patch 7,000 by 400 feet	Same.	Same.	Same.	Same.	...	...
							MAY-PA-LAY
39. from Wah-ka-yan to Ban-taloo	4 miles long, 1 mile wide	Level plateau.	Arid.	Open.	Dry forest with Pyinma and Wagouk.	...	...
40. in the above	a patch 300 by 250 feet	Same.	Same.	Same.	Same.	...	...
41. continue	1 mile long, ½ mile wide	Laterite plateau.	Very arid.	Open.	'Eng'	...	...
42. continue	1½ miles long, 1 mile wide	Level alluvial.	Dry.	Full.	Dry forest with Pyinmah and no bamboo.	...	...
43. continue	2 miles long, 1½ mile wide	Same.	Same.	Same.	Same.	A FEW.	*a few.*
44. in the above	a patch 500 by 300 feet	Same.	Same.	Same.	Same.	...	...
45. continue	3½ miles long, 2 miles wide.	Same.	Same.	Same.	Same.	A FEW.	*a few.*
46. in the above	a patch 550 by 400 feet.	Same.	Same.	Same.	Same.	...	...
							MA-YA-WADEE to
47. Western direction	2 miles wide, extent undetermined	Sloping plateau sandstone.	Excessively arid.	Poor, very open.	Waste of Myin-wa with intersprinkled stunted trees of dry forest.	...	...
48. continuation	4 miles wide, extent undetermined	Undulating laterite.	Same.	Same.	'Eng' with interspresed pine.	...	...
49. continuation	Small patches of indefinite shape, irregularly along the May-ganay and its chief feeders	Sloping in direction of choung.	Less parched.	Full.	Dry forest Poon-zoh; fair vigour.	*Occasional on bank of Stream.*	...
50. South Western direction from	3 miles wide, extent undetermined	Undulating laterite.	Arid.	Open.	'Eng' with interspersed pine.	...	...
							MAY-GA-NAY
51. South bank from Mya-ya-wa-di	1 mile long, 500 yards wide	Gentle hills sandstone.	Very arid.	Open.	Dry forest with much Myin-wa.	A FEW. *A few.*	...

I. A.—(*Continued.*)

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			
Consistence.							Remarks.
Intersprinkled, without limited direction.	Forming considerable feature of *futaie.*	Forming principal feature of *futaie.*	Kind.	Consistence.	Kind.	Contingent.	
S. O.							
...	...	...	..	...	...	...	
...	...	...	...	Full.	C 40 years very fine though not so good as at Tha-nyin-bin.	Favorable ground well covered by young mixture.	A. 2. good.
P. M.							
...	...	...	...	...	...	...	
...	...	...	...	Full.	Short slim 30 to 40 years.	Ground greatly exposed.	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	Very bad.	...	...	...	
...	...	*Former.*	...	Full.	C 30 to 40 yds pretty good.	Same.	Many old stumps without marks in the young localities.
...	...	...	Same.	...	...	...	
...	...	*Former.*	...	Same.	Same.	Same.	
NAY-GANAY CHOUNG.							
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	Poor.	Poonzoh plantation of 1875.	...	...	
...	...	...	...	...	...	...	
P. M.							
...	...	...	...	...	...	...	Girdling in 72.

Statement

Locality.	Size and Shape.	Ground.		In Chief.			
		Configuration and Subsoil	Nature of Surface.	Consistence.	Kind.	Isolated, in a single file.	Sporadic, in a few directions
						MAY-GA-NAY	
52. continue	½ mile long, 450 yards wide.	laterite undulating.	Very arid.	Open.	"Eng	...	...
53. continue	½ mile long, 200 yards wide.	Hilly stony.	Arid	Open.	Dry forest with bamboo.	...	.
54 in the above	A patch 250 by 200 feet.	Same	Same.	Same.	Same.	...	...
55. continue	1½ mile long, 1000 yards wide.	Laterite plateau.	Very arid	Open	'Eng	...	..
56 continue.	1½ mile long, 700 yards wide.	Level alluvial.	Arid.	Open	Wa-gouk	.	.
57. in the above	a patch 700 by 400 feet.	Same.	Same.	Same.	Same	..	.
58. continue	1 mile long, 250 yards wide.	Same.	Same	Same.	Same with a few trees.	...	...
59 in the above	A patch 500 by 250 feet.	...	Same.	Same.	.....	..	.
						MAY-GA-NAY	
60 continue	½ mile long, 330 yards wide.	Gentle hills standstone	Parched but loamy.	Open.	Myin-wa with few trees.	...	
61 in the above	A patch 700 by 500 feet	Same.	Same.	Same	Same.	..	...
62 continue	½ mile long, 420 yards wide.	Same	Same.	...	.....	A FEW.	...
63 continue	1 mile long, 600 yards wide.	Same.	Same.	Same	Same with more trees	A FEW.	
					HOUNG-DA-RAW THOUNG-YIN		
64. Watershed, on main road—to Thinggan-neehoung.	7 miles long, breadth including many whole ranges.	Steep mountains granite.	Rich, mould where declivity permits	Peuplement complete.	Ordinary evergreen forest, not very high or vigourous and permitting strong undergrowth of young trees. No bamboo.	...	..
65. continuation	4 miles long, width undetermined.	Undulating sandstone.	Parched.	Somwhat open.	Dry forest Myinwa.	...	...
66. continuation	4 miles long, width undetermined.	Undulating laterite.	Arid.	Open.	'Eng' with a sprinkling of pine.	...	...
67 continuation	2 miles long, width immaterial.	Same.	Same.	Same	Same.	*A very few stumps along stream*	...
68 continuation	1 mile, width subsequently ascertained to be 300 to 600 yards.	Sloping plateau sandstone?	Parched.	Very open	Stunted dry forest, little bamboo, no sign of poonzoh, yet trees not reaching adult size.	...	..

1 A.—*(Continued.)*

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			Remarks.
Consistence.			Kind.	Consistence.	Kind.	Contingent.	
Intersprinkled, without limited direction.	Forming considerable feature of *futaie.*	Forming principal feature of *futaie.*					
P. M.—*(Continued.)*							
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	Full	C. 30 years short and slim.	Ground greatly exposed.	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	Same.	Same.	Same.	
...	...	...	...	...	...	...	
...	...	...	...	Same.	Same.	Same.	
P. M. 6.							
...	...	...	...	...	...	...	
...	...	...	...	Full.	C. 30 years short and slim.	Ground greatly exposed.	
...	...	Very bad.	...	...	...	...	
Originally.	...	...	...	...	...	...	
WATERSHED TO MYA-YA-WADEE.							
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	This occurrence follows the stream—is not limited to the part visited.
...	...	...	...	Throughout, in tattered patches.	Largest, 2 to 3 span decrepid under these, sickly old saplings more dead than alive.	Soil denies nourishment.	

Statement

Locality.	Size and Shape.	Ground		In chief.			
		Configuration and Subsoil.	Nature of Surface.	Consistence.	Kind.	Isolated, in a single file.	Sporadic, in a few directions.
						HOUNG-DA-RAW-	
69. continuation	2 miles long, width unknown.	Undulating sandstone.	Dry.	Tolerably full.	Dry forest with *Kyetkat*, (a token of moisture. Dry forest Poonzoh.)	...	...
70. continuation	1 mile—width limited.	Same.	Same.	Same.		...	...
71. continuo	2 miles long, width unknown.	Same.	Same.	Same.	Dry forest as above.	...	...
						MYAYA-WADEE	
72. as far as Haploh choung.	2½ miles—merging westwards into arid waste.	Slight undulating alluvial.	Dry.	Full.	Dry forest no bamboo, fair vigour (Pyinma) occasional Poonzoh.	...	72 *girdling has made a clean sweep.*
73 continuation.	400 yards by 800, a straggling patch abounding in transitional veins.	Level alluvial.	Not parched.	Full of gaps dense.	Old dry forest, young dry forest, principally teak.	...	...
74. continuation.	1 mile.	Same.	Same.	Full.	Rich dry forest.	...	...
75. Thanyinbin choung in a Norwest direction.	1½ miles	Same.	Same.	Same.	Same.	...	...
76 West direction.	300 by 600 yards.	Undulating sandstone.	Arid.	Open.	Myin-wah and sparse trees.	...	...
77. Southwest direction.	Indefinite.	Undulate laterite.	Arid.	Open.	'Eng.'	...	...
					BRITISH BANK OF THOUNG-YIN		
78. continuation from dry forest, before Ka-nying Choung.	3 miles long, breadth uncertain 1 to 2 miles.	Low hills sandstone.	Very arid	Open.	Bamboo (Myin-wah) few trees of dry forest, catch only fails to complete outer Arracan hill type.	...	...
79. continuation.	5 miles long, wide?	Undulating and broken *laterite.*	Excessively arid.	Open.	'Eng' with sporadic pine.	...	...
80. continuation.	½ mile wide.	Undulating	Same.	Open.	Bamboo waste.	...	...
81. continuation.	500 yards long, 100 wide.	Level alluvial poor.	Hard.	Paddy.	Land.	...	...
82. continuation.	2 miles long, wide?	Undulating	Very arid.	Open.	Bamboo waste (Myin-wah.)	...	...
83. continuation.	800 yards long, 200 wide.	Level.	Loamy.	Irrigated.	Paddy-land.	...	...
continuation.	2 miles long, 1 to 1½ mile wide.	Level.	Loamy.	Full.	Transitional dry to moist forest very rich.	...	...

1 A.—(*Continued*)

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			Remarks.
Consistence.			Kind.	Consistence.	Kind.	Contingent.	
Intersprinkled, without limited direction.	Forming considerable feature of *futaie*.	Forming principal feature of *futaie*.					
THOUNG-YIN.—(*Continued.*)							
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
TO THA-NYIN-BIN CHOUNG.							
...	...	...	Bad.	Every now and then.	Tortuous feeble shoots, bendingundor the weight of their half dry leaves.	Dense cover propiliting vitality.	
...	...	..	...	Perfect *futaie*	C. 40 years not seeding, straight, tall, great vigour years and mixturenearly adequate.	Moderate oppression of old standards, prohibiting the growth of most, but allowing the best to penetrate.	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
BETWEEN KA-NY-IN-BING CHOUNG AND LEH-DAW.							
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	30 acres.
...	...	...	...	...	...	...	

Statement

Locality.	Size and Shape.	Ground.		In chief.			
		Configuration and Subsoil.	Nature of Surface.	Consistence.	Kind.	Isolated, in a single file.	Sporadic, in a few direction.
					BRITISH BANK OF THOUNG-YIN		
84. continuation.	100 yards wide, length uncertain, a ragged belt skirting the Leh-daw hills at a little distance.	Level alluvial.	Somewhat parched.	Fairly full.	Young dry forest with 50 per cent teak. No bamboo.	...	*Formerly a tree here and there. 300 logs collected out of half the belt*
					BANK OF THUONG-YIN BETWEEN		
85. Environs of Leh-daw, South direction.	Belt of about 300 yards wide, skirting undulating land on the side of main river and reaching its bank.	Level alluvial.	Parched; fires furious.	Full of gaps Filling the gaps.	Dry forest, no bamboo. Tall. Rising forest of C. 30 years, ½ teak.	...	ALMOST NOTHING LEFT.
86. continuation.	Belt 200 yards wide, length undetermined.	Undulating laterite.	Same.	Penplement very defective.	'Eng' somewhat mixed, a little bamboo.	...	...
87. continuation.	Straggling belt 200 yards by 600.	Higher level, alluvial.	Same.	Penplement complete.	Rising dry forest, no bamboo.	...	...
88. continuation.	300 yards across, extension undetermined.	Gradual slope sandstone.	Same.	Open.	Dry forest, no bamboo.	...	...

I. A.—(*Continued.*)

Vegetation.							
Special, with reference to Teak.							
Mature.				Rising.			Remarks.
Consistence.			Kind.	Consistence.	Kind.	Contingent.	
Intersprinkled, without limited direction.	Forming considerable feature of *futaie.*	Forming principal feature of *futaie.*					
BETWEEN KANY-IN-BING CHOUNG.—(*Continued.*)							
...	...	...	Poor.	Good *futaie*, mixture somewhat deficient.	40 to 50 years short seeding, growth slow many distorted.	A few standards—ground greatly exposed in hot season.	
LEH-DAW AND KYOUK-KET.							
...	*Sufficiently so to have made way for reproduction on removal.*	...	Good.	In gaps arising from removal of old stock.	Middling vigour, in appropriate mixture. Occasionally high, straight sturdy young trees.	Cover somwhat damaging but allowing a sufficiency to penetrate.	A number of trees felled by fire in 1869.
...	...	...	...	...	...	...	
...	...	...	...	Throughout, in 50 per cent mixture.	Large and small. Dominating stems 40 years excellant style.	Thoroughly favourable.	
...	...	...	...	...	...	...	

Statement II.

FOREST DEPARTMENT, BRITISH BURMA.

Statement of Teak trees girdled and Forest work done in Season 1875-76.

Name and Number of Section.	Name of Revising Officer.	Forest.	Sub-District.	Trees girdled.	Girdled trees counted by Revising Officer.	REMARKS.
Tharrawaddie ...	C. F. Nepean Esq. Assistant Conservator of Forests.	Shoaylay ...	Padetmyoung	165	104	
			Kadine	216	142	
			Myay-bya	384	221	
			Letpan	96	60	
			Sadine	44	27	
			Choukpyntha	380	252	
			Daulay Nyoungneebin	309	195	
			Sangyee	295	195	
			Thapan	55	44	
Ditto ...	Ditto ...	Toungnyo ...	Kya yoh	679	528	
			Me-wine-toung	534	362	
			Mein-toung	419	362	
			Total Tharrawaddie Division...	3,576	2,492	

Statement III.

FOREST DEPARTMENT, BRITISH BURMA.

Statement of Timber brought from the Forests by Permit Holders in 1875-76.

Name and Number of Section.	Name of Forest Districts.	Name and Residence of Permit holders.	Duration of Permit. From.	Duration of Permit. To.	Timber worked out. Logs.	Timber worked out. Tons.	Amount paid as purchase money for the timber. RS. A. P.	Amount paid as fees for the issue of Forest Permit	Remarks.
Prome East ...	Boolay... ...	Gladstone Willie & Co ...	Lapsed ...	Lapsed ...	178	...	1,324 0 0		Timber lying in mid stream on lapse of Permit and allowed to be brought out by sanction of Local Government.
	Nawing ...				246	...	1,489 0 0		
Prome West ...	Mindoon... ...	Bulloch Bros & Co ...	Ditto ...	Ditto ...	217	...	1,168 0 0		
	Thallaydun and ...	Messrs J. & F. B. Bretto.	Ditto ...	Ditto ...	48	...	207 0 0		
	Shoay tagun ...								
	Mudday ...	Syed Mortaza ...	Ditto ...	Ditto ...	38	...	174 0 0		
					727	610	4,362 0 0		
Sittang ...	Swah ...	.....	Ditto ...	Ditto ...	6	...	49 8 0		
	Mooung and ...	Moung Moh ...	1st January ...	31st Dec. ...	249	...	1,519 13 9		
	Youkthawah ...								
	Thoukyaghat ..	.....	Lapsed ...	Lapsed ...	12	...	178 0 0		
	Koon ...	Burmah Co. Ld ...	1st January ...	31st Dec. 1876...	894	...	7,818 10 0		
	Engtoon and ...	Ditto ...	.....	.....	220	...	1,998 8 0		
	Toonkhan ...								
					1,381	1381	11,564 7 9		

Statement III.—*Continued.*

Name and Number of Section.	Name of Forest Districts	Name and Residence of Permit holders.	Duration of Permit. From.	Duration of Permit. To.	Timber worked out. Logs	Timber worked out. Tons.	Amount paid as purchase money for the timber	Amount paid as fees for the issue of Forest Permit.	Remarks.
							RS. A P	RS A P.	
Upper Salween ...	I Division ...	Moung Shway Oo ...	2nd December .	1st Dec. 1877 ...	314	...	1,839 13 0		
	II ditto ...	Kharwai Hlan ...	Ditto ...	Ditto .	1 075	..	8 458 10 0		
	Meeboung and ... Myanglay ...	Moung Chain ...	15th May 1874 ...	15th May 1875 ...	3,733	..	1,866 8 0		
Lower Salween ...	Koloon Forest ...	Ko Thoroway ...	.....	.....	1,822	...	911 0 0		
Tracts Nos. of Attaran.	Goongee Palaya chg· 31, 32, 26, 36, 37, 38 & 39. ...	Ramasawmy ...	.....	.....	1,291	...	688 0 0	17 0 0	Fee for extraction of Wood of other kinds.
							13,763 15 0		
	Add Revenue Collected on this timber at Kadoe		.....	... ..	...	...	6,857 0 0		
	Total Salween Division ...		.....	.....	8 235	4105	20 620 15 0		
	Grand Total ...		..	. ....	10,313	6094	36,547 6 9	17 0 0	

Form No. 21

FOREST DEPARTMENT, BRITISH BURMA.

Annual Summary of Revenue and Expenditure in the different Divisions during 1875.76.

Classification.	Rangoon.	Tharrawaddie.	Prome.	Western Prome.	Sittang.	Salween.	Kadoe.	Mergui.	Total.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
I.—REVENUE FROM WOOD.									
1. *Brought to depot by Departmental Agency.*									
(*a*) Timber	11,92,536 13 0	44,825 5 3	13,892 10 0	...	74,932 10 1	1,29,856 8 7	...	...	14,56,043 14 11
2. On wood removed from the forests by purchasers &c. (*a*) Timber...	3,204 8 0	737 0 0	2,419 0 0	...	9,565 15 9	13,780 15 0	6,857 0 0	...	36,564 6 9
3. From confiscated drift and waif wood.	13,180 8 0	26 10 9	...	...	10,337 3 0	60 0 0	8,684 4 0	...	32,288 9 9
II.—Minor forest produce.									
1. Grazing dues and sale of grass ...	...	...	...	...	10 0 0	...	...	...	10 0 0
III.—Duty on produce of foreign or private forests imported into British territory.									
1. On wood	...	...	...	...	...	...	2,98,761 7 0	...	2,98,761 7 0
IV.—Miscellaneous.									
1. From fines and forfeitures ...	508 10 0	599 1 0	77 7 0	...	624 15 0	668 0 0	...	...	2,478 1 0
2. From refunds to the Department ...	275 4 0	1,528 9 3	124 7 0	...	396 1 0	78 3 3	...	...	2,402 8 6
3. From other sources	3,037 1 9	1,255 3 6	44 7 0	...	237 0 0	643 15 0	3,628 8 0	...	8,846 3 3
Total Receipts...	12,12,742 12 9	48,971 13 9	16,557 15 0	...	96,103 12 10	1,45,087 9 10	3,17,931 3 0	...	18,37,395 3 2

Form No. 21.—(*Continued.*)

Classification.	Rangoon.	Tharrawaddie.	Prome.	Western Prome.	Sittang.	Salween.	Kadoe.	Mergui.	Total.
EXPENDITURE.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
A.—Conservancy and Works.									
I.—Cost of timber operations.									
1. On wood brought to Depôt by Departmental Agency.									
(*a*) Timber	1,29,541 4 0	84,778 2 10	8,307 7 9	400 0 0	84,269 1 0	1,85,717 15 9	63 2 0	784 0 5	4,93,861 1 9
2. On wood removed from the forests by purchasers &c.									
(*a*) Timber	220 0 0	...	...	...	...	104 0 0	...	...	324 0 0
3. On confiscated drift and waif wood ...	7,305 14 7	36 0 0	69 4 0	200 0 0	6,336 13 2	1,280 0 0	18,279 13 0	...	33,507 12 9
II.—Cost of collecting minor-produce.									
1. Grazing and sale of grass... ...	...	...	...	...	...	...	...	...	...
2. Other forest produce	974 12 1	...	5 8 0	...	198 2 0	1,114 0 0	...	...	2,292 6 1
III.—Cost of forest organization.									
1. Demarcation lines and boundary pillars or marks	1,281 12 0	1,209 8 1	1,033 8 0	...	35 0 0	...	...	...	3,559 12 1
2. Working plans	...	...	...	...	...	...	...	...	...
3. Surveys	1,591 14 2	671 11 3	30 0 0	...	131 0 0	396 2 0	...	...	2,820 11 5
IV.—Cost of the treatment and creation of forests.									
1. Natural forests.									
(*a*) Protection from fire	...	2,167 1 10	85 0 0	...	176 5 0	20 0 0	...	..	2,448 6 10
(*b*) Fencing and enclosing	...	...	42 0 0	...	...	..	...	...	42 0 0
(*c*) Improvement and conservation ...	209 0 3	1,239 12 0	1,580 10 7	...	23 2 0	213 0 0	...	...	3,265 8 10

(d) "Reboisement" or restoration of denuded areas	...	802 8 0	...	...	...	93 13 0	...	...	896 5 0
2 Artificial forsets.									
(a) Formation	17,640 13 9	681 14 8	214 0 0	...	9,222 2 6	155 2 0	...	...	27,914 0 11
(b) Protection from fire	1,396 11 7	489 8 0	415 6 0	...	322 10 0	...	...	...	2,624 3 7
(c) Improvement and conservation ...	6,865 7 2	2,978 11 5	512 10 0	...	...	9 0 0	...	..	10 865 12 7
(d) Fencing and enclosing	34 1 4	5 0 0	...	...	...	..	...	...	39 1 4
V.—Rent of leased forests.									
VI.—Cost of collection duty on produce of foreign &c.	...	...	...	...	...	570 0 0	...	...	570 0 0
VII—Works of utility for the development of forests.									
1. Roads and bridges	603 7 2	17 12 0	...	...	61 8 0	...	..	...	682 11 2
2. Buildings and offices	5,405 12 11	804 11 9	800 6 0	830 9 6	628 7 0	184 8 0	20 0 0	...	8,674 7 2
3. Compensation for land taken up for forest purposes &c.									
4. Other Works...	607 1 2	1,586 8 11	1,118 0 9	...	...	...	...	...	3,311 10 10
VIII.—Cost of Departmental Cattle.									
1. Purchase of stock	19,420 0 0	3,500 0 0	..	...	...	1,800 0 0	...	...	24,720 0 0
2. Hire of stock...	...	...	20 0 0	...	...	...	...	...	20 0 0
3. Feed and keep of cattle	9,272 10 5	3,329 5 6	1,937 4 3	...	868 3 0	521 12 0	...	398 6 9	16,327 9 11
IX.—Cost of Departmental plant and tools.									
1. For timber and wood operations ...	1,809 1 2	409 6 0	106 10 0	...	...	127 1 0	90 0 0	...	2,542 2 2
2 For other purposes	7,085 7 8	431 9 1	290 0 0	75 0 0	53 3 0	495 5 0	63 12 0	2,576 5 0	11,070 9 9
X.—Miscellaneous charges.									
1. Refunds	103 0 0	...	124 7 0	...	35 0 0	.	..	...	262 7 0
2. Law charges	19 6 0	...	..	2 0 0	29 1 0	255 2 0	...	..	305 9 0
3. Other charges...	4,134 6 7	286 3 10	195 14 6	9 8 0	75 15 0	1,543 3 0	...	1,821 14 7	8,067 1 0
Total A. Conservancy and Works...	2,15,522 0 0	1,05,425 7 2	16,888 0 10	1,517 1 6	1,02,465 8 8	1,94,599 15 9	18,516 11 0	5,580 10 3	6,60,515 7 2

Form No. 21:—(*Continued.*)

Classification.	Rangoon.	Tharrawaddie.	Prome.	Western Prome.	Sittang.	Salween.	Kadoe.	Mergui.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Brought forward...	2,15,522 0 0	1,05,425 7 2	16,888 0 10	1,517 1 6	1,02,465 8 8	1,94,599 15 9	18,516 11 0	5,580 10 3	6,60,515 7 2
B.—Establishment.									
I.—Salaries.									
1. Pay of Conservator	12,994 10 0	...	...	...	...	...	...	...	12,994 10 0
2. Pay of Control & Executive officers ...	17,377 3 10	12.324 3 9	5,126 14 2	900 0 0	10,450 0 0	11,822 6 0	...	22 9 6	58,023 5 3
3. Protective Establishments ...	7,410 15 6	7,122 6 9	3,127 12 8	122 0 0	4,815 11 0	3,352 0 0	2,814 0 0	...	28,764 13 11
4. Office Establishments	16,483 12 4	2,558 0 0	1,282 3 5	102 0 0	1,496 0 0	1,670 0 0	3,629 1 0	...	27,221 0 9
5. Deputation and special allowance ...	...	...	...	...	...	...	...	...	...
II.—Travelling allowances.									
1. Conservator	2,443 13 0	...	...	...	...	...	...	...	2,443 13 0
2. Control and Executive Officers ...	4,833 12 6	4,625 12 3	1,888 9 0	180 0 0	1,978 14 0	2,068 8 0	...	168 0 0	15,743 7 9
3. Protective Establishment... ...	4 0 0	...	...	...	...	17 0 0	...	...	21 0 0
4. Office Establishment	...	186 9 0	33 5 10	...	3 4 8	...	...	...	223 3 6
III.—Contingencies.									
1. Stationary	394 6 6	4 15 6	19 12 0	7 8 0	3 7 0	39 4 0	...	...	469 5 0
2. Office rent and carriage of tents and office records	448 0 0	277 8 0	60 8 0	0 8 0	...	...	...	...	786 8 0
3. Pay of Police guards	...	...	...	...	...	...	...	...	...
4. Sundries	5,513 12 4	351 13 0	545 6 0	11 1 0	273 15 0	402 7 0	35 14 0	14 12 0	7,149 0 4
5. Official postage	245 8 6	28 9 6	21 12 6	10 1 6	40 7 0	22 6 0	20 0 0	5 3 6	394 0 6
Total B. Establishments ...	68,149 14 6	27,479 13 9	12,106 3 7	1,333 2 6	19,061 10 8	19,393 15 0	6,498 15 0	210 9 0	1,54,234 4 0
GRAND TOTAL OF ALL EXPENDITURE...	2,83,671 14 6	1,32,905 4 11	28,994 4 5	2,850 4 0	1,21,527 3 4	2,13,993 14 9	25,015 10 0	5,791 3 3	8,14,749 11 2

Form No. 22.

FOREST DEPARTMENT, BRITISH BURMA.

Annual Abstract of the Cash Transactions of the Forest Department, British Burma for 1875-76.

Receipts.	Amount.			Disbursements.	Amount.		
Opening Balance on 1st April 1875...	35,693	1	6	Expenditure	8,14,749	11	2
Receipts...	18,37,395	3	2	Repayments of Deposits	13,721	2	8
Deposits	22,021	8	5	Advances Recoverable	34,106	0	5
Do State Treasuries	8,347	12	0	Remittances to State Treasuries	18,00,300	6	8
Advances Recoverable	30,342	10	7	Profit and Loss...	58,375	4	7
Do Home Government	1,500	0	0	Remittances N. W. Province	500	0	0
Remittances State Treasuries	8,03,138	4	8	Closing Balance on 31st March 1876	19,154	1	8
Madras Military Fund	22	7	10				
Uncovenanted Civil Service Fund	2,445	11	0				
GRAND TOTAL RUPEES ...	27,40,906	11	2	GRAND TOTAL RUPEES ...	27,40,906	11	2

From No 23.

FOREST DEPARTMENT, BRITISH BURMA.

Annual Statement of Outstandings and Liabilities of the Department of Contractors and Disbursers in 1875-76.

Name of Division.	Department Debtor.			Department Creditor.			Balances Due.	
	At Commencement of the year.	Recoveries in cash and value of supplies and work done during the year.	At close of the year.	At Commencement of the year.	Payments made during the year.	At close of the year.	To Department Outstandings.	By Department Liabilities.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Tharrawaddie	2,304 10 2	2,32,459 6 1	2,34,764 0 3	1,66,261 6 0	57,542 12 4	2,23,804 2 4	11,196 11 9	10,959 13 11
Rangoon	...	27,855 5 0	27,855 5 0	2.059 6 0	26,848 4 2	28,907 10 2	152 5 2	...
Sittang	...	1,89,773 1 0	1,89,773 1 0	56,231 7 0	1,48,526 14 0	2,04,758 5 0	14,985 4 0	729 4 0
Salween	...	50.231 15 0	50,231 15 0	...	90,231 15 0	90,231 15 0	40,000 0 0	...
Grand Total Rupees...	2,304 10 2	5,00,319 11 1	5,02,624 5 3	2,24,552 3 0	3,23,149 13 9	5,47,702 0 6	67 234 4 11	11,689 1 11

Form No. 24.

FOREST DEPARTMENT, BRITISH BURMA.

Statement of Timber brought from the Forests by Contractors and Government Agency in the year 1875-76.

Name and number of Divisions.	Name of Forest.	Round Logs.					Square Logs.			Small pieces.	Woods of other kinds.		Logs.	Tons.	Remarks.
		Yatthits.	Loozars.	Doogies.	Keel, Yard, Mast and stem pieces.	Crooks and short pieces.	Squares.	Planks and Shin-byus.	Sleepers.		Logs.	Sleeper pieces.			
	Average cubical contents in cubic feet.	(26)	(45)	(59)	(90)	(20)	(40)	(8)	(1·5)	(7)					
Prome	Nawing	201	329	435	...	...	...	...	...	...	...	...	965	913·9	
	Padaëhin	2	35	65	...	...	...	...	...	...	...	...	102	109·2	
	Oakpho	3	8	31	...	...	...	...	...	...	...	...	42	45·3	
	Mindoon	185	177	681	2	4	...	...	...	...	...	...	1,049	1064·3	
	Logs...	391	549	1,212	2	4	...	...	...	...	...	...	2,158		
	Tons...	203·3	494·1	1430·1	3·6	1·6	...	...	...	...	...	...	...	2132·7	
Tharrawaddie ...	Shoaylay	140	611	392	6	...	...	...	...	7	...	...	1,156	1097·2	
	Shaboung	25	232	652	17	...	...	...	...	...	...	...	926	1021·7	
	Toungnyo	307	284	683	64	..	...	...	...	...	...	...	1,338	1336·3	
	Mimboo	36	629	271	...	...	...	...	...	1	...	...	937	904·7	
	Boben	145	857	758	31	...	...	...	...	...	...	...	1,791	1796·9	
	Toung	39	341	347	77	...	...	...	...	4	...	...	808	875·8	
	Htoo	14	249	425	33	...	...	...	...	1	...	...	722	792·4	
	Minhla	71	221	487	36	...	4	...	...	...	...	...	819	878·5	
	Mokkha	30	87	51	...	...	...	...	...	1	...	...	169	154·2	
	Beeling...	31	118	130	...	...	...	...	...	...	...	...	279	275·7	
	Thongzai	9	41	223	...	...	...	...	...	...	...	...	273	304·7	
	From various Forests...	...	...	...	...	...	...	...	2,044	...	...	...	2,044	61·3	
	Logs...	847	3,670	4,419	264	...	4	...	2,044	14	...	...	11,262		
	Tons...	440·4	3303·0	5214·4	475·2	...	3·2	...	61·3	1·9	...	...	...	9499·4	

Form No. 24.—(*Continued.*)

Name and number of Divisions.	Name of Forest.	Round Logs. Yatthits.	Round Logs. Loozars.	Round Logs. Doogies.	Round Logs. Keel, Yard, Mast, and stem pieces.	Round Logs. Crooks and short pieces.	Square Logs. Squares.	Square Logs. Planks and Shin-byns.	Square Logs. Sleepers.	Small pieces.	Woods of other kind. Logs.	Woods of other kind. Sleeper pieces.	Logs.	Tons.	Remarks.
		(26)	(45)	(59)	(90)	(20)	(40)	(8)	(1·5)	(7)					
Southern or Rangoon.	Pegu	192	94	48	...	...	...	...	...	...	...	...	334	241·1	
	Oakkan	30	124	85	...	...	...	...	...	1	...	...	240	227·6	
	Zamayee	8	57	769	243	...	..	...	...	2	...	...	1,079	1400·5	
	Pounglin	6	56	38	...	...	...	...	...	...	...	...	100	98.4	
	Bawnee	...	89	67	...	...	...	...	...	...	...	...	156	159·1	
	Logs...	236	420	1,007	243	...	...	...	...	3	...	...	1,909	...	
	Tons...	122·7	378·0	1188·2	437·4	...	...	...	...	·4	...	...	...	2126·7	
Sittang	Myolah	47	106	187	5	546	...	...	...	...	...	...	891	567·9	
	Yeanee	9	60	97	...	3	...	...	...	...	...	...	169	174·3	
	Swah	36	130	140	...	42	...	...	...	...	...	...	348	317·7	
	Samoh	10	9	8	...	5	...	...	...	...	...	...	32	24·7	
	Khaboung	35	214	129	1	4	...	...	...	...	...	...	383	366·4	
	Bonkogwah	12	47	82	...	2	...	...	...	...	...	...	143	146·1	
	Hpyoo	65	59	269	71	9	...	...	...	...	...	...	473	535·7	
	Engtoon and Toonkan	15	99	100	18	22	...	...	...	...	...	...	254	256·1	
	Bimbyai	177	390	617	1	32	...	...	...	...	...	...	1,217	1,185·7	
	Gway Thay	26	247	223	5	39	...	...	...	...	...	...	540	523·6	
	Koonoung	26	115	64	4	25	...	...	...	...	...	...	234	209·7	
	Kannee	11	121	166	1	667	...	...	...	...	...	...	966	579·2	
	Thoukyaghat	122	375	168	11	47	...	...	...	...	...	...	723	637·8	
	Moong and Youkthawa	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Padah	64	227	420	36	19	...	...	...	...	...	...	766	805·6	
	Logs...	655	2,199	2,670	153	1,462	...	...	...	..	...	...	7,139	...	
	Tons...	340·6	1979·1	3150·6	275·4	584·8	...	...	...	...	...	...	...	6330·5	

SALWEEN	Beching	20	76	34	...	...	..	..	...	...	...	...	130	118 9
	Yoonzaleen	56	32	24	..	...	...	...	...	..	..	..	112	86 2
	Domdamee	57	260	295	..	2,460	...	...	..	..	..	..	3,072	1595 7
	III Division	17	98	177	...	...	...	..	...	...	..	...	292	305 9
	Thoungyeen	262	2 993	3,357	...	579	..	...	..	...	...	..	7,191	7022 8
	Attaran...	..	..	...	...	1,633	...	...	..	..	..	...	1 633	653·2
	Hlineboay	..	..	...	...	1,886	...	..	...	...	..	...	1 886	754 4
	Lower Salween	..	..	...	..	1,006	.	...	...	..	...	...	1,006	402 4
	Pahpoon	...	30	..	...	..	..	...	..	...	..	...	30	27 0
	Logs.	412	3,489	3,887	...	7 564	...	...	...	...	...	...	15,352	...
	Tons...	214 2	3140 1	4586 6	...	3025 6	..	...	..	...	..	...	..	10966 5
DRIFT TIMBER ...	Obtained from various sources ...	...	46	...	...	...	.	...	841	83	..	...	970	75 8
	Drift teak timber — Irrawaddy Division ...	133	342	292	8	11	8	...	...	...	109	...	903	839 3
	Drift teak timber — Sittang " ..	82	966	1,686	2	61	..	...	...	..	217	..	3 014	3113 9
	Drift teak timber — Salween " " ...	225	918	1,953	...	...	...	..	...	140	830	...	4 066	3972 8
	Drift timber brought in from sea shore	54	242	332	...	80	20	...	..	830	...	...	1,558	801 8
WOODS OF OTHER KINDS... ...	Woods other than teak brought in during the year													
	Salween	..	...	...	...	...	...	...	7 238	...	389	..	7 627	649 4
	Tharrawaddie	...	..	..	...	...	...	...	650	.	..	17.131	17 781	7043 2
	Rangoon	...	...	...	...	...	...	...	..	...	65	6 519	6 584	2728 0
	Sittang.	...	...	...	...	...	..	...	..	...	1,565	..	1,565	1314 6
	Logs. .	494	2.514	4,263	10	152	28	...	8,729	1,053	3,175	23,650	44,068	...
	Tons...	256 8	2262 6	4830 3	18·0	60 8	22 4	...	261 9	147 4	2982 1	9696 5	...	20538 8
	Grand Total Logs .	3,035	12,841	17 458	672	9,182	32	..	10,773	1,070	3 175	23,650	81,888	...
	Grand Total Tons ..	1578·0	11556 9	20400 2	1209 6	3672 8	25 6	...	323 2	149 7	2982 1	9696 5	...	51594 6

Form No. 25.

FOREST DEPARTMENT, BRITISH BURMA.

Statement of Timber received and disposed of from the Forests in British Burma, by the Forest Department, from 1st April 1875 to 31st March 1876.

Particulars.	No. of Logs.	No. of Sleepers.	Total.
Number of Logs on hand on 31st March 1876	66,863	4,145	71,008
Number of Teak Logs brought from the Forests by Contractors and Government Agency	35,776	2,044	
Ditto Woods of other kinds...	2,019	7,888	
Ditto Pynkadoe Sleeper Pieces...	23,650		
Drift Confiscated and Waif Timber...	9,670	841	
Total as exhibited in Form No. 24...	...	...	81,888
To logs in transit in 1874-75 and here brought to account ...	1,119	...	1,119
Number of Logs brought from the Forests by Permit Holders			
Prome East...	727		
Sittang	1,381		
Salween	8,235		
Total as Exhibited in Statement III...	...	...	10,343
Kadoe Revenue Station.			
Number of Logs registered for duty in 1875-76... ...	1,52,736		1,52,736
Number of sleepers obtained by conversion	...	1,01,984	1,01,984
TOTAL OF LOGS AND SLEEPERS...	3,02,176	1,16,902	4,19,078

Particulars.	No. of Logs.	No. of Sleepers.	Total.
Number of Logs and Sleepers sold as per Form No. 26 ...	52,935	1,14,259	1,67,194
Ditto Logs sold to Permit Holders in 1875-76 ...	10,343	...	10,343
Ditto Logs converted for Government purposes ...	15,125	...	15,125
Ditto Logs lost in transit or perished	179	...	179
Ditto Logs delivered to claimants on proof of ownership	4,525	...	4 525
Kadoe Revenue Station.			
Number of Logs cleared at Kadoe on payment of duty in 1875-76	1,21,578	..	1,21,578
By Balance on 31st March 1876 ...	97,491	2,643	1,00,134
TOTAL OF LOGS AND SLEEPERS...	3,02 176	1,16,902	4,19,078

Form No. 26

FOREST DEPARTMENT, BRITISH BURMA.

Statement shewing the amount realized on account of different classes of Timber received on Government account and sold during 1875-76.

Particulars.	Number of logs.	Cubical contents.	Amount realized.	Average amount realized per log.	Average cubical contents per log.	Average amount realized per ton.
			RS. A. P.	RS. A. P.		RS. A. P.
ROUND LOGS. Yatthits	1,255	32,630	18,433 10 9	14 11 0	26	28 3 11
ROUND LOGS. Loozars	9,331	4 29.226	3,34,500 12 0	35 13 6	46	38 15 5
ROUND LOGS. Doogies	12,927	7,23,912	5 31,391 10 7	41 1 9	56	36 11 2
ROUND LOGS. Yard, Mast, Keel and stem pieces ...	303	27.270	22,020 0 0	72 10 9	90	40 5 11
SQUARES. Doos, Doodoos and Thokes	95	1,900	1,810 0 0	19 0 10	20	47 10 1
SMALL PIECES. Crooks, (Boat)	600	*600	204 0 0	0 5 5	1	17 0 0
SMALL PIECES. Small Pieces	1,313	26,260	14,045 8 8	10 11 2	20	26 11 10
Total logs...	25,824	12,41,798	9,22,405 10 0	35 11 6	48	37 2 2
Woods of other kinds...	1,800	76,500	48.881 2 0	27 2 6	42 5	31 15 2
Do. Sleeper pieces...	23,604	4,83,882	1,02,121 3 3	4 5 3	20 5	10 8 10
Total...	25,404	5,60,382	1 51,002 5 3	...	...	...
SLEEPERS. Teak	105,946	1,58,919	2,17,676 10 0	2 0 10	1·5	68 7 9
SLEEPERS. Woods of other kinds...	7,949	11,923	12,443 1 11	1 9 0	1·5	52 2 10
Total...	113,895	1,70,842	2,30,119 11 11	...	...	...
Converted Timber	...	56,461	57,583 2 6	...	...	50 14 3
CONFISCATED DRIFT AND WAIF ... ... Logs	1,707	81,396	21,135 3 0	12 6 1	47 7	12 15 8
CONFISCATED DRIFT AND WAIF ... ... Sleepers	364	546	145 9 9	0 6 5	1·5	13 4 5
Total...	2,071	81,942	21,280 12 9	...	...	...
GRAND TOTAL...	1,67,194	21,11,425	13,82,391 10 5	...	...	...

REMARKS.

Abstract.

Realized under Head I of Revenue	14,56,043-14-11
Ditto do VII less Salvage (12,473-12-0)	19,814-13-9
	14,75,858-12-8
Deduct.	
On account of sales of 1874-75 and previous outstandings realized in 1875-76... ...	1,40,713-14-7
	13,35,144-14-1
Add.	
On account of sales of 1875-76 to be realized in 1876-77	47,246-12-4
Total sales of 1875-76 ...	13,82,391-10-5

Form No. 27.

FOREST DEPARTMENT, BRITISH BURMA.

Statement shewing the amount expended on account of the different classes of Timber received on Government account, during 1875-76.

Particulars.		No. of logs.	Cubical contents.	Amount paid to Contractors.	Average amount paid per log.	Average cubical contents per log.	Average amount paid per ton.	Remarks.
				Rs. A. P.	Rs. A. P.		Rs. A. P.	
Round Logs ...	Yatthits	2,541	66,066	20,924 15 4	8 3 9	26	15 13 4	
	Loozars	10,327	4,64,715	1,12,104 6 0	10 13 8	45	12 0 11	
	Doogies	13,195	7,78,505	1,90,719 6 11	13 11 1	59	12 3 11	
	Yard, Mast, keel and stem pieces	662	59,580	17,755 7 0	26 13 1	90	16 9 3	
Squares ...	Squares Doodoos and Thokes	4	160	72 0 0	18 0 0	40	22 8 0	
	Shinbyns and planks	...	...	.....	.....	...	.....	
Small Pieces.	Crooks	...	...	.....	.....	...	.....	
	Short pieces	9,047	1,80,719	47,449 10 1	5 3 11	20	13 2 0	
Total brought out by Contractors Teak ...		35,776	15,49,745	3,89,025 13 4	10 14 4	43·3	12 8 9	
Sleepers ...	Teak, worked by Departmental agency and Contractors	2,044	3,066	3,832 8 0	1 14 0	1·5	62 7 4	
	Other kinds of wood	7,888	11,832	11,010 5 4	1 6 4	1·5	46 9 5	
		9,932	14,898	14,842 13 4	1 7 10	1·5	49 13 0	
Drift Confiscated & Waif timber ...	Logs	9,670	4,39,461	48,212 8 0	4 15 9	45·5	5 7 9	
	Sleepers	841	1,261	210 4 0	0 4 0	1·5	8 5 0	
		10,511	4,40,722	48,422 12 0	4 9 8	...	5 7 10	
Woods of other kinds ...	Logs	2,019	89,540	23,236 12 6	11 8 1	44·5	12 15 7	
	Sleeper Pieces	23,650	4,84,825	1,09,104 7 3	4 9 9	20·5	11 4 0	
		25,669	5,74,365	1,32,341 3 9	5 2 5	...	11 8 6	
Total paid for year's out-turn...		81,888	25,79,730	5,84,632 10 5	7 2 2	...	11 5 3	

Add expenditure incurred in 1874-75, to account of operations in 1875-76, of timber neaped in the Tharrawaddie and Salween Divisions...	...	...	1,60.741 0 0	1 15 4	...	3 1 10
Add also cost of Administration, direction and other expenditure, chargeable on timber brought to Depots	...	...	1.21,895 15 9	1 7 9	...	2 5 9
I.—Total expenditure on Government timber of season 1875-76	...	...	8,67,269 10 2	10 9 5	...	16 12 10
Deduct expenditure of 1874-75, included above, to exhibit actual cost of timber	...	...	1,60,741 0 0	...	...	...
			7,06,528 10 2	...	...	...
II.—Total Sum chargeable to 10,343 logs of Permit timber.	...	...	31,675 7 0	...	...	...
III.—Ditto chargeable to Kadoe Timber Revenue Station.	...	...	25,015 10 0	...	...	...
IV.—Ditto amount of part payments in 1875-76, to account of timber operations in 1876-77	...	...	51,530 0 0	...	...	...
Total expenditure of the Department on account of this year	...	...	8,14,749 11 2	...	...	...

Form No. 28.

FOREST DEPARTMENT, BRITISH BURMA.

Annual account of Forest Revenue for 1875-76.

Receipts.	Amount.			Amount.		
	Rs.	A.	P.	Rs.	A.	P.
Amount of Revenue realized in 1875-76	18,37,395	3	2			
Deduct.						
Amount realized on account of previous periods and recovered being difference in favor of outstanding contractors	1,58,537	9	9	16,78,857	9	5
Add.						
Outstandings on account of Contractors	67,234	4	11			
Ditto on account of timber sales	47,246	12	4			
Ditto do. value of Elephants loaned.	30,697	5	7			
Ditto on account duty on Foreign timber stored at Kadoe Revenue Station ...	1,63,140	0	0	3,08,318	6	10
Value of year's transactions...	.....			19,87,176	0	3

Disbursements.	Amount.			Amount.		
	Rs.	A.	P.	Rs.	A.	P.
Amount disbursed in 1875-76	8,14,749	11	2			
Deduct.						
Amount disbursed on account of 1876-77	51,530	0	0			
Balance ...	.....			7,63,219	11	2
Add.						
Amount disbursed in 1874-75 on account of 1875-76.... ...	1,60,741	0	0			
Amount due for transactions during the year under review but not yet disbursed	11,689	1	11	1,72,430	1	11
Cost of the year's transactions	.....			9,35,649	13	1

	Rs.	A.	P.
Outstanding's of sale IX...	17,652	0	0
Credit to be afforded by Tounghoo Executive Engineer	5,416	12	4
Padouk timber supplied to the Madras Government	18,806	0	0
Teak supplied to Executive Engineer, Thongzai...	295	0	0
On account of sleeper pieces supplied to R. & I. V. S. Railway	5,077	0	0
Rs.	47,246	12	4

	Rs.	A.	P.
Value of the year's transactions...	19,87,176	0	3
Cost of the year's transactions	9,35,649	13	1
	10,51,526	3	2
Deduct difference between the value of stock at the commencement and close of the year	15,377	0	0
Net result of the year	10,36,149	3	2
Add to this sum debitable to Imperial Expenditure	8,496	0	0
Net result of the year	10,44,645	3	2

Appendix A.

Comparative Statement shewing the burdens which Foreign and British Timber have to bear before they reach a Port of Shipment.

Division and Nature of Charges.	Charges	Royalty.	Import.	Export.	Total.	Remarks.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
FOREIGN.						
Karennee and Shan States.						
Price paid for logs launched into the water including Royalty to Chief Rs. 10 to 35 according to quality; average say ...	22 8 0	...	...	...	...	
Rafting charges from Kyodan to Kadoe per log.	4 0 0	...	...	...	...	
Import duty at Kadoe per log...	...	...	2 12 0	...	...	
Cost per log of ordinary good timber, laid down in Maulmain	...	...	...	...	29 4 0	Average contents per log—50 cubic feet.
Ningyan Forest.						
Royalty to the King of Burma depending upon special agreement and according to quality of logs, but say for an ordinary doogie of good quality	...	8 0 0	...	...	...	
Expenses of felling, dragging and launching per log say	15 0 0	...	...	...	...	
Rafting charges from Ningyan to Toungoo per log, say	2 8 0	...	...	...	...	
Rafting charges from Toungoo to Rangoon per log say	3 12 0	...	...	...	...	
Cost per log of ordinary, doogies of good quality laid down in Rangoon	...	...	...	...	29 4 0	Do. do. 50 cubic feet.
Maulalay Forests.						
Royalty to the King depending upon special arrangement, and according to quality of logs, but say for ordinary doogies of good quality	...	7 0 0	...	...	...	
Expenses of felling, dragging and launching per log say	15 0 0					
Rafting charges from Ava to Rangoon per log	3 0 0					
Cost per log of an ordinary doogie laid down in Rangoon	...	...	...	...	25 0 0	Do. do. 37 cubic ft.
British.						
Prome Permit Timber	20 0 0	7 0 0	...	...	27 0 0	
Sittang do do	20 0 0	7 0 0	...	...	27 0 0	
Salween do do	18 0 0	7 0 0				
Tharrawaddie worked by Government Contractors	17 0 0	2 12 0 ...	at ...	Kadoe. ...	27 12 0 17 0 0	

Appendix B.

Statement showing the cost of feed and keep of Elephants of the Forest Department, British Burma, during 1875-76 as compared with that of the Commissariat Department.

Names of Divisions.	Number of Elephants kept.	Total cost of feed for the year.	Total cost of keep for the year.	Amount paid for medicines.	Amount paid for year.	Total expenditure per annum.	Average cost for each animal per annum.	Average cost of a Commissariat Elephant for 1875-76.	Average cost per animal of the Forest Department per mensem.	Average cost per animal of the Commissariat Department per mensem.	Value of labor in cash receipts and work performed.
		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Rangoon ...	18	3,847 2 0	5,090 14 2	231 6 0	1 225 2 0	10,394 8 2	577 7 5		48 1 11		17,327 12 0
Tharrawaddie ...	7	1,061 0 9	2,196 12 9	71 8 0	231 4 0	3,561 3 6	508 10 0		42 6 2		6,006 8 0
Prome ...	3	884 7 6	1,017 11 9	32 6 0	34 6 0	1,968 15 3	656 5 9	401 7 10	54 11 9	33 7 3	1,492 0 0
Sittang ...	2	284 3 0	581 0 0	3 0 0	4 4 0	872 7 0	436 3 6		36 5 7		836 8 0
Salween ...	1	155 10 0	363 0 0	.....	54 7 0	573 1 0	573 1 0		47 12 1		886 7 0
Mergui ...	2	89 14 9	308 8 0	.....	4 10 0	403 0 9	201 8 4		16 12 8		.....
Grand Total	33	6,322 6 0	9,557 14 8	338 4 0	1,554 1 0	17,773 3 8	538 9 3	.....	44 14 1	.....	26.549 3 0

| | | |

Appendix E.

Table showing the result of the examination of the Karen Tays & Yahs in the Southern portion of the Tharawaddie Division, during 1875-76.

Forest District.	Name of Tay.	Situation of Tay.	Population. Men. Who have permanent cultivation.	Men. Who cut yahs.	Men. Otherwise occupied.	Men. Total.	Women.	Children. Male.	Children. Female.	Total Population.	Approximate area of yahs cut in 1875. Acres.	Approximate area of yahs cut in 1875. By men.	Average area per man in round numbers.	Area cut annually by each Tay.	Number of persons cultivating Betel vines.	Remarks.
Thongzai Choung District.	Pala Tay ...	Na youay Choung ...	...	13	...	13	10	14	8	45	25	7	3½	46		
	Thoonaiza Tay ...	Thongzai " ...	...	12	...	12	11	11	6	40	88	21	4¼	120		
	Kuaymapan Tay ...	Pyan " ...	...	4	...	4	4	2	2	12						
	Nga kaw Tay ..	Pyan " ...	...	12	...	12	9	3	3	27						
	Pah yan Tay ...	Thabyoo " ...	...	9	...	9	9	6	7	31	21	6	3½	32		
	Tha youay Tay ...	Baw law " ...	...	6	...	6	3	4	6	19	25	9	3	18		
	Poh Soh Tay ...	Thongzai " ...	...	3	...	3	3	9	1	16	13	4	3	9		
	Thee thanay Tay ...	Kaindagyee " ...	...	4	...	4	4	6	2	16	22	5	4½	18		
	Kodoogway ...	Kodoogway " ...	...	3	1	4	3	2	3	12	0	0	...	...		
Total Thongzai District....		.....	...	66	1	67	56	57	38	218	194	52	4	264		
Koon Beeling District.	Bolo Tay. ...	Waya Choung ...	...	5	1	6	4	7	13	30	3	1	4	20		
Kadin Beeling District.	Thadoonoung Tay ...	San " ...	...	10	...	10	9	12	13	44	32	9	4	40	5	
	Tetto Tay ...	Toung " ...	3	6	1	10	8	14	10	42	35	7	5	30	9	
	Lower Yeatho ...	Myouk " ...	4	1	1	6	6	4	9	25	3	1	3	3	3	
	Middle Yeatho ...		6	...	2	8	6	9	12	35	...	...	...	...	7	
	Upper Yeatho ...		15	4	8	27	21	28	26	102	20	4	6†	18	14*	
	Byoo gway Tay ...	Saloo " ...	...	7	...	7	4	7	8	26	24	5	5	35	2	
	Shoay yah Tay ...	Singoung " ...	...	15	...	15	18	17	12	62	78	15	5	80	4	
Total Kadin Beeling District...		.....	28	43	12	83	72	91	90	336	192	41	5	200‡	44	
Mokka District.	Shoay gyah Tay ...	Talini that Choung...	...	5	...	5	6	9	4	24	16	4	4	20	4	
	Sa oo Tay ...	Koonyan " ...	...	5	...	5	3	3	4	15	35	7	5	35	2	
	Oong Bway Tay ...	Shouk pen " ...	...	14	1	15	14	16	17	62	48	13	4	56	3	
	Pauhlay Tay ...	Koonzan " ...	...	24	1	25	25	23	19	92	106	23	5	120	...	
Total Mokka District ...		.....	...	48	2	50	48	51	44	193	205	47	5	240	9	
Total of the above four districts ...		.....	28	162	16	206	180	206	185	777	594	141	4·25	688	63	

* Five of these persons do not live in this Forest.

† The 3 men who intend cutting this year cut 18 acres last year.

‡ Besides this area grazing ground is necessary for the 3 villages of Yeatho and for Tetto Tay.

No Yahs were burnt by this Tay last year, the acreage given is that cut in 1874 and measured by Forest Ranger Moung Way.

No Yahs were cultivated last year the acreage given is that of 1874.

Appendix F.

Exhibiting Foreign Timber account from the year 1856-57 to the year 1875-76 inclusive.

	1856-57.	1857-58.	1858-59.	1859-60	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.
								YIELD OF FOREIGN FORESTS.												
Foreign timber — Logs and converted pieces.	84,537	58,263	51,422	54,196	69,634	88,728	77,792	94,602	1,02,655	1,40,121	79,046	1,12,599	1,29,842	61,543	1,01,944	1,07,406	79,572	1,15,848	1,36,939	1,88,966
Foreign timber — Tons	73,460	49,133	44,948	49,287	61,704	76,759	68,078	75,681	82,849	1,01,448	55,867	73,703	76,903	52,157	82,484	98,409	78,027	1,26,557	1,65,913	2,12,950·8
REVENUE.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Duty on Foreign timber...	2,52,698	1,75,399	1,83,040	1,94,256	2,30,726	3,02,484	2,30,827	2,17,971	2,83,207	2,47,618	1,25,555	1,85,755	2,14,004	1,38,549	1,49,957	1,64,670	2,13,148	1,91,400	2,20,934	2,98,761
CHARGES.																				
Establishment and Direction ... ... / Maintenance	* 7,500	* 7,500	* 7,500	* 7,500	* 7,500	* 7,500	* 7,500	* 9,950	17,331	14,905	14,787	11,067	11,052	* 9,148	6,345	6,113	6,162	6,174	6,098	6,499
Conservancy and working	...	...	...	...	...	...	...	1,649	33,455	21,298	14,263	9,050	11,308	8,688	8,272	13,454	9,096	16,179	14,019	18,517
Total ...	7,500	7,500	7,500	7,500	7,500	7,500	7,500	11,599	50,786	36,203	29,050	20,117	22,360	17,836	14,717	19,567	15,258	22,353	20,117	25,016
Net Revenue	2,45,198	1,67,899	1,75,540	1,86,756	2,23,226	2,94,984	2,23,327	2,06,372	2,32,421	2,11,415	96,505	1,65,638	1,91,644	1,20,713	1,35,240	1,45,103	1,97,890	1,69,047	2,00,817	2,73,745

* These figures are approximate. The Expenditure for those years having been mixed up with the accounts of the Deputy Commissioner Amherst District, *actuals* cannot be given but the above may be relied on as very nearly correct; the principal items of Expenditure having been collected and an average struck.

Appendix G.

Statement shewing the Market value at Calcutta of Teak Timber exported from Moulmain and Rangoon from the year 1859 to 1876.

	1859.		1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.		1871.		1872.		1873.		1874.		1875.		1876.	
	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class	1st class.	2nd class
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
MOULMEIN.																																				
January ...	95-100	85-95	95	65-75	110-15	...	105- 7	65-80	100- 5	50-60	80-120	52-75	105-20	80-100	100-130	75-90	70-110	45-50	85-125	55-70	85-130	75-85	90-125	60-75	90-100	55-60	80-100	50-55	90-105	60-70	95-115	65-75	95-105	60-70	90-95	55-60
February ...	...	...	85- 7	...			105-10	65-70			80-105	52-75	125-30	90-115	100-130	85-90	70-110	55-65	85-125	60-70	85-130	70-80									...	...				
March ...	95	85-90	85	...	100- 2	...	115-20	65-75	100- 5	50-60					100-130	65-70	80-110	60-65	80-120	60-77																
April ...	95-100	75-90	85- 2	...	95-100	...	120- 5	65-75			80-105	60-70			100-130	65-75			80-150	60-75	90-130	60-70					80-100	50-55	...	...	95-115	65-75	95-105			
May ...	90-100	75-90	90-100	...	100-10	...	115-20	65-75			90-120	75-85	115-25	90-110			80-110	60-65	80-150	60-75	90-130	60-75	90-120	60-75	90-100	52										
June ...	60-110	...	85- 90	...	105-10	...					90-120	75-85			100-130	60-70			85-150	60-75					80-100	52	80-100	50-55	90-105	60-70	...	...				
July ...	90- 95	60-80	100- 5	...	105-10	70- 5	100-20	65-75-70	100- 5	50-60	90-120	75-80	115- 25	80-100					115- 30	75-90	...	...	...	...	80-100	50-55					...	...				
August ...	...	...	100- 10	...	105- 7	65-75			100- 5	50-60			125- 30	90-100					115-30	75-90	85-120	60-70	90-120	60-70	80-100	50-55							95-105	60-75		
September ...	95	75	110	...	100- 5	65-75	110-20	65-70			85-105	75-80	140- 80	118- 25	95-120	60-70	80-110	55-65	105- 15	90-100	85-110	60-70	90-120	60-65	80-100	55-60			95-110	60-70	95-105	60-70	...	...		
October ...	85- 95	65-75	100- 5	...	105- 7	65-70			80-125	50-75	90-125	70- 5	130-140	80- 92					105- 15	90-100	85-125	60-70			80-100	50-55	80-100	50-55								
November ...	90- 95	65-75							80-125	50-75	120- 30	55-60	125- 30	80- 85	90-110	60-65	90-120	55-70																		
December ...	95	65-75	105-20	...	110	70	105-10	60-70			105- 30	80-100	100-110	75- 90	90-110	45-50			80-130	60- 75	90-125	60-75	90-100	55-60												
RANGOON.																																				
January ...	65-100	...	80- 5	60- 5	100- 5	...	95-100	65-75	80- 90	45-50	50-60	40- 5	75	50	90- 95	55-75	55-65	...	...	...	...	...	90-100	60-70	80-90	50-55	70-85	50	...	...	90-100	50-55	90-110	50-55	80-90	50-55
February ...	...	...	...	55-60			...	...			50-60	40-5	...	...	75- 85	40-45	50-60	...	80- 85	...	70-75	65									...	...				
March ...	55- 80	...	...	60- 5	90- 5	...	100-110	65-75							55- 60	...	50-60	...	80- 85	...																
April ...	80	60	...	50- 5	85-90	...	105-110	85-70	80- 5	45-50	50-80	40- 5			60- 70	...			75- 80	...	70-95	50-55					70-85	55	...	...						
May ...	70- 80	50-65	60-70	...	80-90	...	100- 10	65-70			60-75	45-60	60-80	...			50	...	70- 75	..	70-90	50-55	90-100	60-70	80-90	50										
June ...	50- 85	...	65-70	...	90-93	...					55-60	47-50							100	60					75-90	50	70-85	50	...	...	90-110	50-60				
July ...	55- 80	...	65-70	...	100	...	100-10	60-70	75-80	45-62	55-60	45-50	80-100	50- 65	55- 65	40-45			100	70	...	...	...	...							...	...				
August ...	...	...	70-80	...	90-100	60- 5							90-95	60- 70			...	...							75-90	50					...	...				
September ...	55- 75	...	90	...					65-70	45-60	...	45-65	95-100	...					120	80	70	50	80-90	60	70-85	50							90-110	50-60		
October ...	80	...			...	...	100-10	60-70							50- 65	...	...	...	130	70-75	70-95	50			70-85	50					90-110	50-55				
November ...	65- 90	...	80-90	...	80- 90	55-60			55-60	45-55	80-90	60-70	106	60					130	65-70	70-95	60	80-90	55-60			70-85	50-55	...	...						
December ..	80	...	90-80	...	...	...	90-100	50-65			75	50	95-100	50-60	50-60	...	...	...	...	...	90-100	60-70	80-90	50-55	70-85	50										
MARKET VALUE AT RANGOON OF TEAK TIMBER.																																				
January ...	42		...		...		52		...		...		50		...		50		55		65		65-70													
February ...	...		50		...		...		...		56		...		59		45		55		60						65								60-70	
March ...	...		...		50		47		...		...		...		55		45		55		60															
April ...	50		...		54		44		43		...		58		...		50-55		55-60		60															
May ...	...		51		50		50		...		...		...		...		50-55		55-60		65						65-70									
June ...	...		...		51		...		...		56		57		...		50-55		65		65		65						65-70		65-75		60-70			
July ...	...		...		...		...		...		...		...		60-65		55		65		65				65											
August ...	...		52		40		...		...		...		54		60-65		55		65		65															
September ...	51		52		...		53		50		57		...		55-60		55		65		65						70									
October ...	...		...		...		49		48		...		56		55-60		55		67½		70															
November ...	...		...		...		49		...		...		...		50-55		55		65		75		60-65													
December ...	...		50		51		...		46		55		65		50		55		65		70		65													

RESOLUTION

ON THE

REPORT ON FOREST ADMINISTRATION

IN

BRITISH BURMA

During 1875-76.

Extract from the Proceedings of the Chief Commissioner, British Burma, in the Revenue Department,—No. 81, dated the 7th September 1876.

READ—

Report on Forest Administration of British Burma for the year 1875-76.

General summary.

RESOLUTION.—This report, like its predecessor, has been compiled by Mr. Ribbentrop, Officiating Conservator. The general results of the year as shown in it are satisfactory. While girdling operations in accordance with the views expressed by the Government of India have almost entirely ceased, and the attention of the department has been chiefly directed to the questions of conservancy and reproduction, a financial result has been arrived at, which gives a net surplus of more than double the amount obtained last year, and nearly double that of the most successful years since the formation of the department.

2. The year has been marked by the introduction of two important measures, which, as closely affecting the operations of the Department, have for some time been under the consideration of the Chief Commissioner. The one extends the provisions of Act VII. of 1865 to the forests west of the Irrawaddy, and in parts of the Tenasserim division; the other refers to the protection of some of the more valuable kinds of trees other than teak, *thitka*, and *thitkadoe*, which have already been reserved under special rules. The largely-extended area thus brought under the provisions of Act VII. of 1865 will, perhaps, not prove very valuable as regards the production of teak; but there can be no doubt that portions of it abound in valuable timber, which it is essential to conserve, and the supply of which would speedily diminish if these forests were left uncontrolled. In consequence of the wholesale destruction of many of the more valuable kinds of trees, it has been found necessary to prohibit the unrestricted felling of 12 kinds. The system of requiring permits for cutting trees of the reserved kinds, free of any payment in the case of persons wanting timber for their own use, and on payment of a small fee in the case of those who cut it for sale, will, it is to be hoped, ensure the protection of the trees without entailing any great hardship on the people. At the same time, the Chief Commissioner has to press upon the Forest Department the necessity of a cautious discretion in working the rules laid down, because they come into operation among a people who have apparently been accustomed to fell timber without restriction, and who, from its hitherto plentiful supply, have considered themselves justified in providing for their own wants without regard to the claims of Government or the needs of future generations.

Reserves.

3. An increase of 32,294 acres in the area of reserved forests has been confined entirely to fuel reserves. Except in the case of reserves required for special purposes, it is, perhaps, as well that no further steps should be taken for notifying reserves until some definite plan for their selection and classification has been decided on. It has no doubt been the case that some tracts have been reserved without any special reference to their value as teak-producing localities, and this, probably, has arisen from the selection having been left to any officer for the time being in charge of the district, and who had, in some cases, to be content with reserving any land that might happen to be available. It is, perhaps, too, owing to the known unsuitableness of some of the reserves for the purposes for which they have been selected, that

Forest officers have permitted the cultivation of *toungya* within them. The difficulties of the subject are admittedly great, and have not been overlooked; the habits of a nomad people, who, though peaceable in disposition and not giving much trouble, yet recognise no rule which interfered with their uncontrolled use of whatever lands they desired for their crops, seemed to district officers to claim and demand a special indulgence. Under such a license, valuable property of Government was every year diminishing in area by the loss of the timber; while, under the wandering habits of the hill-men, no corresponding benefits accrued from the cleared wastes. A space opened out one year for cultivation was deserted in the next, and each in turn rapidly reverted to jungle. It seems to the Chief Commissioner that the time has come when all concessions in regard to such a system should cease, and it should be understood that, when a tract has been reserved, no *toungya* cultivation within its boundaries will on any pretence be permitted. The fact that, under the plea of *toungya* claims, outsiders traded upon the practice, and, without paying a rupee, abstracted from Government forests large quantities of valuable wood, is an additional reason for the stricter conservancy which is now enjoined.

Cutch reserves

4. It is satisfactory to know that steps have been and are being taken to extend the area of the cutch reserves. The increasing value of cutch renders it desirable that every effort should be made to prevent any falling off in its manufacture. The uncontrolled felling of these trees, both for the manufacture of cutch and for fuel, raised some apprehension of the supply failing; but it is hoped that the formation of reserves and the rules requiring permits for felling cutch-trees will avert any such misfortune.

Demarcation staff.

5. The progress made by the demarcation staff has not been great, but the result is directly attributable to the very weak staff available for the work, consisting of only one Civil and two Forest officers, and to the frequent illness of these officers under the exposure and privations which the work entailed. A commencement, however, has been made on a systematic plan of procedure, and this is a great step gained. Whatever may be finally decided on as to the classification of reserves,—whether it be considered advisable to have but one class, or more,—the plan now adopted, of laying down an outer line and declaring all land within that line to be reserved, will meet the requirements of either case. From the forests inside the line will be selected the portions to be reserved under the strictest rules, and the remainder can then be treated under less strict rules as ordinary reserves, or be made over to the Civil officers for treatment as district forests. This plan need not interfere with the reservation of teak forests situated in the plains, and falling outside the line selected. It is believed that the greater part of these have already been reserved, and they should remain so.

Toungya teak cultivation.

6. With the close enforcement of the rules applicable to reserves, the system of *toungya* teak cultivation within their limits must necessarily cease. The system has been but an experimental one, and, so far as it has gone, may be considered fairly successful; but the probable advantages to be gained from such a system can never compensate for the risks incurred in allowing *toungya* clearings within a reserve. The fires which are necessary in effecting clearances for this species of cultivation may in a few hours destroy the work of years. *Toungya* teak cultivation outside the reserves has, it is satisfactory to know, been discontinued, and wisely so. Not only would the protection of small detached patches of teak add considerably to the work of the establishment, but it would appear to be impossible to carry out the condition—that of assigning *toungya* grounds—under which this teak has been planted. Whatever promises have been made must, as far as possible, be carried out; but, probably, the Karens themselves will be the first to feel the difficulty of keeping within any defined limits that may be assigned to them.

Prosecutions under Forest rules.

7. The small number of offences reported against the Forest rules during the year is satisfactory as far as it goes, but the Chief Commissioner has reason to fear that, from the numerical weakness of the subordinate establishments, many such offences go unpunished. It should be distinctly understood that, while it is advisable to

avoid harassing the people in petty cases, it is the duty of the Forest Department to prosecute all serious offenders and to ensure the rigorous observance of the rules, without which conservancy can never be a complete success. The Conservator seems to be of opinion that Magistrates do not treat this class of offences with sufficient severity; it must be remembered, however, that more frequent prosecutions would probably result in severer sentences than would be awarded to what are, to all appearances, isolated cases. The Chief Commissioner desires that all cases where subordinate Revenue officers are found giving unauthorized permission to people to fell teak or other reserved timber, should be specially reported. The probability is that illicit gains are made by granting such licenses.

Fire conservancy.

8. Protection of the reserves against fire has been carried out with success during the year under review, for, with the exception of the fires in Rangoon in April, and in Sittang in May, both of which were noticed in last year's report, there have been only two small fires during the year. These occurred in the Magayee and Kyethpoogan plantations, which are each protected by a fire-clearance 40 feet broad. This width does not seem sufficient for protection; the ladder principle, which has been used with success in some parts of the province, should be more extensively applied. In accordance with the orders of the Government of India, conveyed in the resolution on the British Burma Forest Report for last year, a detailed statement is given in paragraph 34 of the different areas which have been successfully protected with the periods during which the protection has continued, and the expenditure on that account. The dates of the fires in the Boben reserve are not given, but there have been three since 1869. In the Singway reserve there appear to have been no fires. All the others mentioned have been more or less severely burnt within the last two years.

Teak cultivation.

9. Teak cultivation was carried on in the province in three ways,—by direct Government agency in plantations, by *toungya* cultivation within the reserves, and by the same means outside the reserves. The latter part of the work was done by Karens, in accordance with agreements made with Major Seaton before his departure from the province. The majority of the cultivators failed to carry out their promises, but a total area of 203⅝ acres was cultivated with 104,551 teak and 11,914 *maizallee* plants, at a cost of Rs. 971-13-3. It has been recognized that it is impossible to apply a proper system of conservancy to these outlying blocks, the largest of which, planted this year, was only 37¾ acres; and this system of cultivation will, in accordance with the views expressed by the Government of India, be abandoned for the future. Within the State reserves, *toungya* teak cultivation was carried on in the Prome, Tharrawaddy, and Salween divisions. In Prome the results are not known, owing to the death of the officer in charge; in Tharrawaddy a total area of 187 acres was planted, at a cost of Rs. 7 per acre, with 49,101 plants; and in Salween, 12,920 plants were sown on 79 acres, at a cost of Rs. 127. As directed in the Government of India's resolution on last year's report, detailed statements of these operations are given at paragraphs 48 and 80 of the report for this year. Artificial teak cultivation by direct Government agency was confined to the Magayee plantation, in which 150 acres have been sown during the year with *teak*, *thitka*, and *padouk*. The two latter woods are reported to have been failures to the extent of 50 and 75 per cent. respectively, and this is attributed to mismanagement, which, in the case of the *padouk* at least, showed a strange misappreciation of the conditions necessary to success.

Assistance to natural reproduction.

10. The Officiating Conservator's remarks on this head in paragraphs 50 and 51 of the report are well worthy of attention, and there is no difficulty in recognizing the general soundness of Mr. Ribbentrop's conclusions. To establish a balance between expenditure and reproduction is the great problem which the Forest Department has to solve, and the system here enunciated appears to contain the key to the solution.

Lac.

11. The experiment in lac culture in the nurseries near Rangoon may be declared a success. The insect has been naturally reproduced, and there is now no ground for appre-

hending a failure. In Sittang, for reasons which are not explained, this cultivation failed altogether.

Cultivation of foreign plants.

12. The cultivation of foreign plants has been more successful during the year under review. Gamboge and *Acacia Arabica* have done well, and some other plants hold out a prospect of success. On the other hand, ipecacuanha and cardamoms have altogether failed.

Cinchona.

13. Out of 27,000 cinchona plants put out during the year on a new clearing, nearly 21,000 are stated to have succeeded. The people of the province appreciate the drug, which has now been fairly introduced into the country. Five Karen apprentices are receiving instruction in the method of planting cinchona; but, from a statement that several thousand cuttings and seedlings which have been distributed to Karens are doing well, it would seem that special instruction was hardly required.

Ficus elastica.

14. Two hundred and twenty-eight trees of this species are reported as growing vigorously at the end of the year in the Magayee plantation, and some useful experience has been gained as to their habits and requirements. The exports of india-rubber from this province, which last year amounted to 2,800 maunds, were 3,161 maunds in the year under report. There seems, therefore, every reason to believe that this cultivation will be remunerative.

Girdling operations.

15. There was no girdling during the year in any of the State reserves, and only 3,576 trees were girdled in the unreserved forests. This work was done in Tharrawaddy, at a cost of Rs. 853-8-5. It is believed that the rest thus given to the forests can be extended over another year without interfering with the supply of timber or the profits of the department, and for the future there will be no difficulty in keeping the operations within safe limits. It becomes more important to allow as much rest as possible to the reserves, as the forests in the Salween division, which have hitherto been considered as valuable teak-producing sources, are now suspected to be nearly worked out. From a report by Mr. Ferrars on the Thoungyeen district, it appears doubtful whether any more attention should be paid to these tracts than is sufficient to prevent their further exhaustion as long as there is so much more important work before the department in other parts of the province.

Blasting operations.

16. The blasting operations in the Hlowa *choung* were continued, and 43,075 cubic feet of rock were removed, at a cost of Rs. 1,133. Compared with last year, the work done amounts to only one-fifth, while the cost has increased by Rs. 250. No explanation is given of the greatly enhanced rate of expenditure. The Giek *choung*, in Sittang, was also cleared without expense to Government.

Report on the Mergui division.

17. A long and interesting report by Mr. Whittall, who was in charge of the Mergui division during the year, is attached to the Conservator's report. It has been found, as was expected, that the reservation of these forests had been postponed until their value was greatly diminished, and their prospects are now uncertain. *Thingan* occurs sparsely scattered along the course of each river or mountain stream, but the trees are nowhere sufficiently concentrated to make their extraction alone a remunerative work. Peculiar difficulties appear to beset the natural reproduction of this tree, and it might be concluded from Mr. Whittall's report that if left to take its chance with the other denizens of the forest, it would gradually disappear. A peculiarity of these forests is the large variety of species that occur in small areas; many of these woods are such as in Mr. Whittall's opinion are likely to be valuable for commercial purposes, but at present they are unknown to the trade. The proposals made for introducing them to the English and Calcutta markets, as well as Mr. Whittall's proposal to establish a timber depôt at Mergui, will receive due consideration.

Outturn of Government forests in British Burma.

18. The outturn of Government forests in British Burma during the year of report was—

	Logs.	Pieces.	Sleepers.	Tons.
Teak	55,264	...	2,521	46,597
Other woods ...	2,019	23,650	8,902	11,754

showing a gross increase over last year's figures of 11,000 tons of teak and 7,000 tons of other woods. Only 6,094 tons of teak were extracted by permit-holders, against 21,517 tons in 1874-75, and the excess timber delivered by Government contractors over the previous year is 19,842 tons. These figures are particularly worthy of attention, as it is chiefly to the greater care and energy exhibited by the department in supervising the work of these Government contractors that the unusually successful results of the year are to be attributed. The increase in the outturn of other woods is entirely due to contracts made with the railway. The yield of *thitka* and *thitkadoe* has diminished, but, owing to the reservation of the forests west of the Irrawaddy, it is believed that the outturn of these woods from Government forests will again increase during the ensuing year. Besides the figures given in this paragraph, large quantities of wood, chiefly for sleepers, were extracted by the Railway authorities, who had permission to enter the forests and help themselves.

Outturn from foreign forests.

19. The imports of teak from forests beyond British territory during the year were as follow:—

	1875-76.		Increase over 1874-75.	
	Logs.	Tons.	Logs.	Tons.
By Salween	138,609	166,380	38,798	32,584
„ Sittang	38,327	38,327	8,971	11,948
„ Irrawaddy	12,030	8,293	4,258	2,510
Total ...	188,966	212,950	52,027	47,037

The imports of 1874-75 increased over the previous year by 39,356 tons, so that at present the increase seems to be in a progressive ratio. This is undoubtedly due in great measure to an increased feeling of security on the part of timber traders; but, as mentioned last year, the increase cannot be expected to continue, and the extreme limit of production from these foreign forests will probably soon be reached. There are, indeed, large tracts of forest up the Irrawaddy, which have been hitherto almost untouched, but some years must elapse before these are worked to any great extent. The proportion of under-sized timber received at Kadoe has again increased, which in itself indicates the gradual exhaustion of the forests whose produce is brought down the Salween.

Permit system.

20. Except the Arakan leases, the holders of which are only permitted to extract timber of a certain size (seven feet six inches in circumference), only three permits are now in force. One of these, in the Sittang division, expires on the 1st December next, and the other two, in the Salween division, on the 1st December 1877. The effects of the gradual decline of this system are shown at the Kadoe station this year, where British timber exhibited a decrease of 6,903 logs and pieces submitted for registration. As the former holders worked the forests in a most wasteful manner, this decrease is extremely satisfactory.

Timber duty.

21. The duty levied *ad valorem* on the selling price of logs has again proved a financial success, raising the Government rate per log from Rs. 2-5-7 to Rs. 2-7-2 on the average, and giving perfect satisfaction to traders. More careful supervision has resulted in the disappearance of the difficulty noticed last year in connection with the registration of hammer-marks. During the year under review, 145 new marks and 194 renewals were registered at Kadoe.

Financial results.

22. The financial results of the year's working are as follow:—

RECEIPTS.	Rs.
(1)—Value of timber brought to depôt by direct departmental agency ...	... 14,56,048
(2)—Revenue on wood removed from the forests by permit-holders, &c. ...	... 36,564
(3)— Ditto from confiscated, drift, and waif wood	... 32,288
(4)—Duty on foreign timber at Kadoe	... 2,98,761
(5)—Miscellaneous receipts	... 13,736
Total (omitting fractions of Rupees)	... 18,37,392

DISBURSEMENTS.

	Rs.
A.—Conservancy and working	6,60,515
B.—Establishments	1,54,234
Total ...	8,14,749
Net revenue	10,22,643
Add spent on cinchona plantations, and reckoned as Imperial expenditure by order of the Government of India	8,496
Actual surplus ...	10,31,139

Excepting (4), which has shown an increase in both the last two years, it will be found that the receipts have increased and decreased inversely to 1874-75. (1), which showed a decrease of Rs. 43,598 last year, has during this increased by the enormous amount of Rs. 9,78,814. The receipts under this head are, in fact, more than triple those of last year, and there is no doubt that the credit of this result is mainly due to the careful and energetic working of the Conservator and his subordinates in the department. The work was facilitated by a favourable rain-fall and a good floating season, the effect of which may be partly estimated by the increase under head (4). Under (2) there is a considerable decrease of Rs. 1,21,718—a result which, with the views entertained by Government as to the harm done to the forests by the wasteful method of working under the permit system, cannot be deemed otherwise than satisfactory: as already pointed out, at the close of 1877 the revenue under this head will virtually cease. Head (3) shows also a large decrease of Rs. 1,74,773. This revenue is always liable to fluctuations, which are necessarily unaccountable; but the special arrangements which have been sanctioned, with the employment of a steam-launch, should effect improvements in this department of the work. Under (4) there is an increase of Rs. 77,827, attributable partly to the favourable season, and partly to increased confidence on the part of traders; while (5), or miscellaneous receipts, shows an increase of Rs. 6,460. This result may fairly be attributed to increased care in supervision and strictness in enforcing regulations. Other factors also have to be taken into consideration in accounting for the increased profits of the department: among these, is the higher rate obtained for timber—*viz.*, Rs. 39-5-3 per ton—an increase of Rs. 5-3-1 per ton on last year's prices. Attention has been paid to the reduction of outstanding advances made to contractors. These, which once threatened to develope into a serious evil, have been decreased by Rs. 1,57,318 during the year; while Rs. 40,000 more were recovered in April 1876. The first sum mentioned includes Rs. 58,375, which, by order of the Government of India, were written off as bad debts. The experiment has also been tried of converting and squaring timber, and it is found that, when offered for sale in this way, the extra profit more than covers the expense incurred. It is probable that more may be done in this direction without undue interference with trade.

Communications.

23. To facilitate communications between the mainland and the numerous islands, a schooner was bought at the beginning of the year for the South Tenasserim division; a steam-launch has been placed on the Salween, chiefly for the purpose of checking timber thefts, and two or three other purchases of boats have been made; a steam-launch has also been sanctioned for the Rangoon river.

General health of the department.

24. The Chief Commissioner regrets to observe from the report that the health of the officers of the establishment has been far from satisfactory. Two officers died during the year of cholera, which was for a time very prevalent in some parts of the province; and several others are mentioned as having suffered severely from sickness. It is hoped that an effective addition will soon be made to the departmental staff in this province, which specially claims the favourable consideration of Government for the efficient administration of its large and valuable forests.

Services of officers.

25. Mr. Rivers Thompson desires to record his acknowledgments to Mr. Ribbentrop, the Officiating Conservator of Forests, for his active and successful exertions to promote

the efficiency of the department under him. He has spared himself no labour, and has shown a zealous interest in his work. The officers referred to in the 189th and following paragraphs of the report deserve the thanks of Government.

By order of the Chief Commissioner,

C. W. STREET, MAJOR,
Officiating Secretary.

No.

FROM

THE HONOURABLE T. C. HOPE,

Offg. Secretary to the Government of India,

To

THE CHIEF COMMISSIONER OF BRITISH BURMA.

Dept. of Revenue,
Agriculture, and Commerce.

Forests.

Calcutta, the December 1876.

SIR,

I AM directed to acknowledge the receipt of your letter No. 273-81, dated the 22nd September last, forwarding the Annual Report of the Forest Department in British Burma for 1875-76, and to communicate the following observations and orders of the Government of India.

2. The year under report has been one of unusual prosperity, the financial results, as compared with 1874-75, having been—

	1874-75. Rs.	1875-76. Rs.
Receipts	10,74,802	18,37,395
Charges ... A	5,31,841	6,60,516
Charges ... B	1,30,797	1,54,234
Total	6,62,638	8,14,750
Surplus	4,12,164	10,22,645

The gross revenue and cash surplus have been larger than in any year since the formation of the Department in British Burma, while the proportion of charges to gross receipts was favourable (44 per cent.) There is, however, an entry in the financial statements which is not fully understood. Under profit and loss a sum of Rs. 58,375 is entered in the annual abstract of the cash transactions on page XXIII. Paragraph 131 of the Report states that this sum (Rs. 58,375) was written off on account of unrecovered advances made in previous years to timber contractors. The amount had apparently been charged in the accounts of those years, when the payments to contractors were made, and if this is the case, the item had no place in the account current of the year under review. Moreover, it could obviously not be included in the account without a per contra entry. There is no separate entry of this amount, and as it is improbable that it is included in any of the other items, the only possible explanation seems to be that it forms part of the sum of Rs. 18,37,395 shown as receipts; and it seems also probable that in statement No. 21, this amount is included in the sum of Rs. 14,56,044 exhibited as the amount realized by the sale of timber brought to depôt by departmental agency. This should be cleared up at an early date, and meanwhile it will be assumed that the actual receipts of the year were less by this amount. Making this correction, and excluding Rs. 8,496 spent on

A

cinchona plantations, the transactions of the year, exhibited under the great main heads, appear to have been as follows :

RECEIPTS.		CHARGES.	
	Rs.		Rs.
I.—Departmental timber operations I. 1 & 3	14,20,958	I. 1 & 3, half of VIII, IX and B.	6,31,826
II.—Other Revenue I. 2, II, III & IV ...	3,49,062	I. 2, II, VI, X, one quarter of VIII, IX and B	64,050
III.—Formation, protection and improvement of Forests	.....	III, IV, VII, one quarter of VIII, IX, and B	1,10,378
TOTAL ...	17,79,020	TOTAL ...	8,06,254

The Conservator should be requested in future reports to give a brief analysis of the receipts and charges in the manner here indicated, the distribution of items, if different from that here adopted, being explained in detail.

4. The greater part of the amount entered under II appertains to the duty on foreign timber, which realized Rs. 2,98,761, and to which, according to Appendix F, Rs. 25,016 is chargeable. The distribution of charges here suggested, although not absolutely correct, gives upon the whole a fair representation of the outlay under each of the three great heads stated ; it shows that the Government timber operations in Burma are profitable, and this also appears from the results of statements 26 and 27 of the present report, though in these returns the apportionment of charges has been made on a different principle. It is also apparent from the statements entered in paragraphs 159 to 161, that the Government timber operations of the Burma Forest Department have been profitable from the commencement. As far as the information recorded in the annual reports enables the Government of India to judge, this branch of forest administration in Burma is, upon the whole, on a satisfactory footing.

5. Doubtless, however, further improvements and a more economical management of the timber business are possible, and the Forest officers should not cease in their efforts to make this branch of their work more efficient and more economical. Several remarks recorded in Mr. Ribbentrop's report seem to the Honourable the President in Council to suggest the possibility of further and important improvements in this respect. Regarding the marking of timber, adverted to in paragraph 117, I am directed to state that it is essential that all Government timber despatched from the forests should be marked thoroughly with marks indicating the forest from which it was brought. Timber in transit can never be safe unless it has been efficiently marked. The improvement in the mode of adjusting contractors' accounts, reported in paragraphs 131 to 133, is satisfactory, and the Honourable the President in Council trusts that the Conservator may soon be in a position to report the entire abolition of the system of part payments. The report of the operations for collecting drift and sea-shore timber, given in paragraph 108, shews that this business has been attended to with energy and success. It is a satisfactory result that 9,670 logs were salved during the year, of which 5,145 were Government, and 4,525 private property. These operations are necessary for the protection of the produce of Government forests, as well as of the timber trade generally, and the Honourable the President in Council trusts that the efforts of the Forest Department in this respect will be maintained and continue to be successful.

6. In one respect the management of the Forest Department during the year does not show favourably, and this is the cost of keep and feed of elephants, the average cost of Commissariat elephants during the year having been Rs. 401, while those of the Forest Department cost Rs. 538. The outlay on keep and feed of the Forest Department elephants seems high, and the reason why it is higher than the cost of the Commissariat elephants should be explained.

7. It is satisfactory that the price realised by the sales of teak timber at depôts averaged Rs. 39 per ton, a rate which, as explained in paragraph 161, is higher than has ever been realised in previous years. But considering that in Appendix G the market value at Rangoon of teak timber is quoted from Rs. 60 to Rs. 70 per ton, and on the assumption that there is no important difference in the quality between the average Government and private timber, it

does not appear that Government realises the full value which it might obtain by the sale of its property. This seems to be confirmed by the remarks recorded in paragraphs 122 and 123 of the report. The Conservator should persevere in his endeavours to make such arrangements as will ensure the realisation of prices for the Government timber, which will more and more approximate to its real market value. The supposition that any difficulties in disposing of the timber at remunerative rates might induce Government to alter its system of working the forests, adverted to by the Conservator, is groundless; the determination to stop the permit system and again to work the forests on Government account has been come to after full consideration of all circumstances, and the Government of India will not readily be induced to contemplate a change in this respect.

8. A large proportion of the timber was sold to public departments, principally to the Rangoon-Prome State Railway. From paragraph 148 of the report it would appear that the timber operations undertaken to supply the railway actually resulted in a loss. This, however, does not agree with statements in other portions of the report, and the Conservator should submit a detailed account exhibiting the amount expended on the timber sold to public departments, including a proportionate allowance for establishment and general charges, and *per contra* exhibiting the amount actually realised from public departments on account of this timber. Such a statement should in future accompany every annual report.

9. The Honourable the President in Council deems it necessary to make these remarks regarding the working of the forests, because the surplus revenue realised from this important branch is necessary in order to make available the needful funds for the formation, protection and improvement of the forests. It has been correctly stated by Mr. Ribbentrop, in paragraph 152 of his report, that the outlay on this account has hitherto been insignificant and quite incommensurate with the magnitude of the interests at stake. The Government of India has repeatedly expressed its willingness to sanction the needful outlay on demarcation work, on plantations, on fire protection, and on other works of improvement; but it is obvious that the initiative in proposing such outlay must come from the local authorities.

10. It is satisfactory to notice that the measures taken for extending the Magayee plantation will ensure a larger addition to the planted area during the current year than usual. At present it may be right to concentrate this work at that spot in the Rangoon Division, but as soon as competent supervision is available, teak planting on a large scale should be resumed or commenced in other divisions. It is true that hitherto the cost of these departmental plantations has been so high, that it may be doubted whether their future yield will suffice to cover the interest on the capital that will be expended on their formation and maintenance until they begin to be self-supporting. Considering that, according to all accounts, teak does not, as a rule, form pure forests, it is suggested for the Conservator's consideration, whether it will not be preferable to plant narrow belts of teak, alternating with the original forest, with the view of their eventually forming a forest in which teak is mixed with other trees. It has been noticed that the average cost of the 711 acres planted at Magayee has been Rs. 75 per acre. The Conservator should consider whether these expensive plantations might not be so arranged as eventually to assist in converting the surrounding forest into a teak-producing tract. This, of course, presupposes that a sufficient demand for timber of other kinds will spring up in future to make room for the spread of teak from self-sown seed.

11. From paragraph 34 it is gathered that the Mokkha Beeling and Boben reserves, as well as two reserves in the Yoonzaleen valley, have been consecutively protected from fire for the last four or five years. This is a good beginning, though as yet on a small scale. In forests where protection from fire is secured, the cultivation of teak, whether by departmental agency, or on Toungyas through the agency of the Karens, or on natural blanks in the forests caused by the seeding of bamboos or other causes, should be extended as far as competent supervision is available. But it cannot be sufficiently impressed upon the officers of the Burma Forest Department, that these operations can only be undertaken with any reasonable chance of success in forests

which have for some time been protected from fire, and where competent and continuous supervision on the spot is available. These are the only limitations upon which the Government of India must insist in the extension of works of improvement. As far as the grant of the necessary funds is concerned, there will be no difficulty; and should in any one year the budget grant not provide sufficient funds for these works, it will rest with you to make the needful provisions by transfer from other sub-heads.

12. It is obvious that fire protection can only be successful in demarcated reserves, in which no Toungyas are cut except for the purpose of teak cultivation.

The Honourable the President in Council is glad to conclude from paragraphs 3 to 6 of your review, that you have decided to take steps for the early demarcation of as large an area as possible of forest producing teak, cutch and other valuable trees, as reserved forests, within the limits of which no cutting of Toungyas will be permitted, except for the purpose of cultivating teak and other valuable trees. The Honourable the President in Council trusts that the sanction of an additional Conservator, conveyed in letter No. 1046, dated the 7th October 1876, and the other measures which have lately been taken in order to strengthen the forest staff in British Burma, will make it possible to form an efficient demarcation staff under each Conservator, and to attach to each forest demarcation staff one or two competent civil officers to act on behalf of the Deputy Commissioner in this matter. It is understood that during the impending working season an effort will be made to complete demarcation in the Tharawaddi district, and the Honourable the President in Council hopes that Major Seaton will find it possible to commence the formation of reserved forests in one of the forest districts of Tenasserim. Mr. Whittall's report on the forests of the Mergui district has been read with great interest, and the Honourable the President in Council trusts that Major Seaton may find it possible, at an early date, to resume forest operations in that district; but as regards the demarcation of reserves, it probably is more important to consider whether a commencement may not be made in the Attaran or Thoungyeen district. Mr. Ferrars' account of the teak resources of the Thoungyeen is not hopeful. Major Seaton should consider whether it will not be possible to save what still remains of these teak forests on the British side of the Thoungyeen valley by demarcating them as reserves.

13. Should it be found necessary in any case, in order to demarcate a sufficient extent of valuable forest, to assign defined areas to the Karens in which they may cut Toungyas without reference to the protection of teak, this may, under the sanction in every instance of the Government of India, be done as an exceptional and special case, and on the distinct understanding that if in any case the people with whom such a settlement has been made transgress the rules laid down, or cut Toungyas outside the limits assigned to them, the restrictions of the forest rules, which prohibit the cutting of Toungyas in teak localities, will again be enforced within the Toungya grounds assigned to them. As a general rule, the Honourable the President in Council desires that the principles laid down in paragraph 7 of the orders on the Report for 1874-75 should be strictly maintained, and that the question of assigning Toungya grounds to the Karens, with permission to cut and burn the forest without reference to teak in the areas assigned to them, should be deferred until the permanent forest reserves have been finally demarcated and placed under efficient protection. But if Major Seaton, who originated the idea of assigning Toungya grounds to the Karens, should find it necessary to make an exception either in the Thoungyeen or in any other district of the forests under his charge, the Honourable the President in Council will not object to a settlement being made with the Karens in the manner indicated, as a special case and under strict rules.

14. As already stated on previous occasions, the main strength of the department must now be concentrated upon the work of demarcation, and of protection and improvement of the demarcated reserves. Further remarks on this important subject will be communicated to you when replying to your Officiating Secretary's letter of the 7th October, No. 296-18. From paragraph 13 of the Inspector-General's recent report on the Forest Administration of British Burma, it appears that Mr. Brandis does not expect that it will

be possible to demarcate a larger area than 850 square miles in the Tharawaddi district. It is obvious that this is only a small proportion of the area that must be constituted as permanent State forests in Burma, if it is intended that the Government forests in that province shall eventually furnish a sufficient supply of teak timber for local consumption and export trade. With the present orders, I am directed to forward for your information and for that of the two Conservators of British Burma, three copies of the last Annual Reports of Bengal and the Central Provinces, with the orders on them of the Government of India. You will observe that the area of the State forests in Bengal has now reached 2,585 square miles, and in the Central Provinces 2,332 square miles, and that in both provinces further extension of the reserves is contemplated.

15. From paragraph 15 of your review and statement II of the Report, the Honourable the President in Council notices that 3,576 trees were girdled in the Shoaylay and Toungnyo districts of the Tharawaddi forest. It is stated that these trees were outside the reserves; but I am directed to observe that, according to all accounts, the selection and demarcation of permanent reserved forests in the Tharawaddi district has by no means been completed; that the limits of the reserves selected will doubtless be subject to considerable alterations; and, under these circumstances, that it will obviously be difficult to say whether any particular forest tract will be included within the limits of any reserve. It is also obvious that when, as in the teak forests of British Burma, one valuable kind of tree is mixed with a large number of trees of no or little value, the future productiveness of the reserve must depend on the maintenance in the forest of as large a proportion of teak trees as possible. On these grounds it has been decided that, for the present, no teak is to be girdled in the permanent reserves. In the forests outside the permanent reserves, the mature and marketable trees may gradually be removed; but this operation can obviously not be commenced in any district in which the demarcation of the permanent reserves has not been completed, and in which these reserves are not yet free of Toungya cultivation save for the purpose of planting teak.

16. Moreover, as already said, the main strength of the superior staff must now be devoted to the work of demarcation, and their attention must not be distracted by the operations necessary to make a good selection of the trees to be girdled. The Conservator states, in paragraph 51 of the report, that it is necessary to supply the market with teak and to make a revenue, and that, therefore, the discontinuance of girdling for a long period is impracticable. As long ago as 1874, in the orders on Mr. Baden-Powell's report on the reorganisation of the forest system of British Burma (paragraph 11 of letter No 802, dated 28th July 1874), it was suggested for the Chief Commissioner's consideration, that the girdling operations should for a time be discontinued, and an injunction to the same effect has since then, in paragraph 4 of letter No. 1391, dated 30th December 1874, been repeated. The Conservator's duty is carefully to consider the orders of Government, and to frame his measures in accordance with these orders.

17. I am now directed to request that, during the current year, as well as during 1877-78, no teak tree may be girdled in any of the Government forests of British Burma, whether included within the reserves or not so included, save in very exceptional cases, and then only on your special sanction, which should in every case be reported to the Government of India. From the statement given in paragraphs 169 and 170 of the Conservator's report, it seems evident that although Mr. Ribbentrop's estimate of one tree yielding two logs on an average is possibly not accurate, a large quantity of dry timber must still be available in the forests. But even if this were not the case, it is evident, from the statement recorded in paragraph 172 of the report, that the supply of timber from the forests beyond the frontier is not likely to diminish considerably for many years to come; the imports of teak timber from foreign territory have been larger in 1874-75 and 1875-76 than in any previous year.

18. The interests of trade, therefore, are not likely to suffer by the temporary suspension of girdling operations; and should the net revenue of the Government forests be less during the next few years, this is a very small matter, if compared with the urgent necessity of providing for a permanent supply of teak and other timber from the Government forests of British Burma. The measures

necessary to attain this end will fully occupy the time, and attention of the entire forest staff in British Burma, and nothing must be permitted to interfere with this duty. After the close of the working season of 1877-78, the two Conservators should submit proposals regarding such girdling operations as they may consider necessary or advisable, and the Government of India will then be prepared to take their proposals into consideration.

19. In conclusion, I am directed to observe that it is not necessary, and not convenient, to enter decimals of acres in the annual report. They should in future be omitted from area statements such as those given in paragraphs 9 and 10. Decimals below the tenth part of a square mile should also be omitted from the area statements of Appendix D, and from similar statements. The Conservator's attention should be drawn to the statement of unreserved forests recorded in Appendix D, which gives the area at 1,929 square miles. A reference to paragraph 72 will shew that the area of the unreserved forests in the two divisions of British Burma, in which the forests are at present under the Forest Department, is very much larger, and the two Conservators should submit approximate returns of the unreserved forests in the different districts the forests of which are under their control.

20. The Honourable the President in Council is glad to learn that Mr. Ribbentrop, the Officiating Conservator, has given you satisfaction, and that the services of the officers named by him have merited your commendation.

I have the honour to be,

SIR,

Your most obedient Servant,

T. C. HOPE,

Offg. Secretary to the Government of India.

—

No.

COPY, with copy of report, forwarded to Financial Department, with reference to paragraphs 2 and 8 of the present orders.

C. J. LYALL,

Under Secretary to the Government of India.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN THE

PROVINCE OF ASSAM

FOR THE YEAR

1875-76.

By GUSTAV MANN,

DEPUTY-CONSERVATOR OF FORESTS, ASSAM.

SHILLONG:

PRINTED AT THE ASSAM SECRETARIAT PRESS.

1876.

No. 94 A.

FROM GUSTAV MANN, ESQ.,

Deputy-Conservator of Forests, Assam,

TO THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Dated Shillong, the 25th August, 1876.

SIR,

I HAVE the honour to submit the Progress Report of Forest Administration in Assam for the year 1875-76.

I have the honour to be,

SIR,

Your most obedient Servant,

GUSTAV MANN,

Deputy-Conservator of Forests, Assam.

CONTENTS.

	Para.
INTRODUCTORY	1
Changes in district boundaries	2
Notifications of Inner Lines	3
Revision of Forest Rules	4
Leases of timber-bearing lands	5
Rules regulating timber-cutting	6
List of trees	7
SECTION I.—Inspection of Forests	8
Gáro Hills district	9
Topographical description	10
Rivers	11
Climate	12
Situation of forests	13
Area of forests	15
Description of forests	16
The timber-trade	18
Kinds of timber	20
Prices of timber	21
Uses made of timber	22
Revenue from timber	24
Destruction of forests	28
SECTION II.—Reserves	30
Gauháti Division	31
Tezpur "	33
Golághát "	42
Goálpára "	46
Cachar "	60
Reserves under Civil Officers	62
SECTION III.—Plantations	63
Gauhati Division—	
Caoutchouc plantation	65
Timber "	66
Tezpur Division—	
Caoutchouc plantations	68
Plantations under Civil Officers—	
Makum Teak plantation	78
Shillong plantations	79
Plantations of wood suited for charcoal manufacture	83
SECTION IV.—Open Forests—	
Goálpára Division	84
Forests under Civil Officers	85
SECTION V.—Yield of the Forests—	
Gauháti Division	91
Tezpur "	94
Golághát "	95
Goálpára "	96
Cachar "	99
From forests under Civil Officers	100
SECTION VI.—Financial	104
SECTION VII.—General—	
Accounts	110
Deputy-Conservator's tour	111
Elephants	112

CONTEMPLATED WORK IN 1876-77— PARA.

Gauháti Division	...	...	...	...	...	...	113
Tezpur "	...	...	...	...	...	...	114
Golágháť "	...	...	..	...	...	...	115
Goálpára "	...	...	..	...	...	...	116
Cachar "	...	...	...	...	...	...	117
Civil Officers	...	...	...	...	...	...	118
Services of Officers	...	...	...	...	...	...	119

STATEMENTS EXHIBITING THE ANNUAL ACCOUNTS—

Form No. 26.—Annual account current of cash transactions.
" " 28.—Summary of revenue and expenditure.
" " 29.—Statement of outstandings and liabilities.
" " 30.—Account of revenue realized.
" " 39.—Statement of timber brought to depôt.
" " 40.—Timber account.
" " 41.—Statement showing the amount realized on account of the different classes of timber.
" " 42.—Annual statement showing the amount expended on account of timber received from different divisions.

Area of reserved forests.
" of unreserved forests.
" of plantations.
" of forest tracts protected from fire.
Prosecution for breaches of Forest Rules.

APPENDICES.

Appendix I.—List of trees.
" II.—Register of reserves.
" III.—Statement of valuation surveys made in the Sidli forests.
" IV.—Statement of examinations of concentric rings in Sâl-trees in the Sidli forests.
" V.—Statement of consumption of tea-boxes in Assam.

PROGRESS REPORT

OF

FOREST ADMINISTRATION IN ASSAM,

For the year 1875-76.

By GUSTAV MANN,

Deputy-Conservator of Forests, Assam.

INTRODUCTORY.

THE main statistical data of Assam, as bearing on Forest conservancy, as well as an account of the districts in this Province, were given in last Annual Forest Report. The position of the forests, and their distribution, was shown on a map submitted with the same.

Changes in the district boundaries.

2. An important change, as affecting the position of the forest reserves in the Golághát forest division, has taken place in the alteration of the boundaries of the Nowgong, Sibságar, and Nága Hills districts. This alteration was described in the Government of India, Foreign Department, Notification No. 3,386, dated the 24th December, 1875, republished in the *Assam Gazette* of January 1st, 1876, page 5. It defines the boundaries of the Nága Hills district, in supersession of the notification by His Honour the Lieutenant-Governor of Bengal, dated the 16th December, 1867.

By the above ruling, portions of the Nowgong and Sibságar districts, as shown on the maps submitted with last year's Forest Report, are transferred to the Nága Hills district; and the Mikir Hill forest reserve, formerly situated in the Nowgong district, as well as that portion of the Nambor forest reserve which was situated in the Sibságar district, are now both part of the Nága Hills district; and the statement made in paragraph 197 does no longer hold good as regards the forest reserves comprised in the Golághát forest division.

Notification of Inner Lines.

3. The Inner Lines of the Darrang, Lakhimpur, and the Cachar districts, which affect the administration of the Government forests in this Province, were settled during the year under review.

The south Inner Line of the Cachar district was described in Foreign Department Notification No. 2,299 P., dated the 20th August, 1875, and republished in the *Assam Gazette* of September 11th, 1875, page 497.

The Inner Line of the Lakhimpur district was described in Foreign Department Notification No. 2,427 P., dated the 3rd September, 1875, and republished in the *Assam Gazette* of September 25th, 1875, page 520.

The Inner Line of the Darrang district was described in Foreign Department Notification No. 631 P, dated the 8th March, 1876, and republished in the *Assam Gazette* of March 18th, 1876, page 177.

Revision of Forest Rules.

4. The Government forests in Assam, which are gazetted, under Act VII. of 1865, either as "reserves" or "open forests," are managed under the Bengal Forest Rules, sanctioned by the Supreme Government in Public Works Department Notification No. 13 F., dated the 16th February, 1871, and published in the *Calcutta Gazette* of 1st March, 1871, page 454. But a draft of revised Forest Rules for this Province was submitted by the Chief Commissioner to the Government of India in December, 1875, for sanction.

Timber-bearing lands.

5. General principles in dealing with applications for timber-bearing lands were laid down by the Chief Commissioner, and circulated for the guidance of the Deputy-Commissioners in charge of the districts in Assam Proper and Cachar.

Rules regulating timber-cutting on Government lands.

6. Tax continues to be levied on the twenty-nine trees enumerated in paragraph 84 of last year's Forest Report; but, in addition to this, the Chief Commissioner has laid down rules for the regulation of timber-cutting on Government lands in Assam Proper (except those gazetted as reserved or open forests under Act VII. of 1865, or such lands the proprietary right in which Government has alienated, fully or partially, whether temporarily or permanently). These Rules will be quoted in Section IV.—"Open Forests."

List of useful trees.

7. Additions to the list of useful trees growing in the Province of Assam, are enumerated in Appendix I. of this Report.

SECTION I.—INSPECTION OF FORESTS.

8. In the season 1868-69, the general inspection of the forests in Assam was commenced and completed during the year under review by the inspection of the forests in the Gáro Hills district.

Boundaries of the Gáro Hills district.

9. The latter comprises the most westerly portion of the range of hills situated between the Brahmaputra and Surma Valleys, and is bounded as follows:—

North and West.—The Goálpára District.
South.—The Mymensingh „
East.—The Khási and Jaintiá Hills District.

Great complications existed about these boundaries, which have all been settled by demarcation and payments of compensation to the Susung, Bijni, and Mechpara zemindars, by which the protection of some of the forests in the Gáro Hills has become much more feasible.

Topographical description.

10. The whole of the district consists of comparatively low hills, the centre, or Tura, range of which only reaches a height of 4,652 feet. The extraction of timber from the interior would be, if not impossible, very expensive, and cannot repay itself at present, even with the Sâl-timber from some of the forests existing in the centre of these hills.

Rivers.

11. There are, however, excellent waterways all around and immediately at the foot of the Gáro Hills, such as the Dodnai, Krishnai, Jinjiram, Singimari, Bagai, Nitai, and Sumasery, down which timber has been floated for many years past from forests situated ten to fifteen miles in the hills.

No timber-floating can be done in the cold season, as all the above rivers are nearly dry.

Climate.

12. The climate of the Gáro Hills is wet, like that of the rest of Assam. The rainfall during the last three years at Tura, the head-quarters of the Deputy-Commissioner in the Gáro Hills, has been the following :—

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1873	0·43	0·34	3·23	9·59	5·71	24·91	17·26	13·89	10·00	0·62	....	0·45	86·43
1874	2·14	3·89	1·49	3·07	13·87	16·75	34·53	7·80	30·08	19·10	....	....	133·32
1875	1·69	0·56	0·61	5·93	20·45	31·45	20·66	28·14	9·33	0·53	....	0·15	119·50
* Average....	1·42	1·59	1·77	6·19	13·34	24·37	24·15	16·61	16·67	6·75	....	0·20	113·08

Situation of forests.

13. From a revenue point of view, the most valuable forests in the Gáro Hills are the Sâl forests, covering the northern slopes immediately above the Goálpára plains. But there are, besides these, isolated Sâl forests in the interior and the southern part of the hills, which, as regards the size of the trees and the condition of the forests generally, are even better; but then, as stated above, they are so inaccessible that, at the present market-value of Sâl, the extraction of timber would not be remunerative.

14. From an economic point of view, however, the mixed lower hill forests, covering the central or highest range in the Gáro Hills, which forms the watershed between the Brahmaputra and the Surma Valleys, are the most important, since the sources of most of the mountain streams are situated on this range, and kept running by the forest growth surrounding them.

Area of forests.

15. The area of the Sâl forests worth protection in the Gáro Hills is estimated at 250 square miles, whilst that of the mixed lower hill forests on the central, or Tura, range is estimated at about 100 square miles.

Description of forests.

16. The Sâl forests, and especially those most accessible on the northern slopes, are very much intermixed with the trees which compose the mixed lower hill forests, and in many parts the Sâl-trees are very much scattered, and, comparatively speaking, exist only in small numbers. Besides this, jhoom-cultivation is carried on in most of them, and, although not that intense jhooming as practised in the western part of these hills, still the whole forest area is thereby subjected to gradual deterioration, which is all the more dangerous, as these people have been only a few years under British rule, and still look on the forest *par excellence* as their natural and legitimate means for increasing the yield from their fields, by burning and applying the ashes and charcoal as manure; and changes in this mode of cultivation by the Gáros can only be brought about very gradually and cautiously.

17. The rest of the vegetation in the Gáro Hills consists of low scrub of the trees composing the mixed lower hill forests, together with a dense growth of a small species of bamboo, which springs up promiscuously on the fields after they have been jhoomed. This latter mode of cultivation has been carried to such a pitch now in the western part of these hills, that the respective villages watch over the growth of jungle on the old jhooms so much, that they claim compensation from their neighbours, if, through any fault of theirs, fire has spread.

The timber-trade.

18. The chief timber-markets to which the timber from the Gáro Hills is taken are—

Within the Province :—

Nagorbera.	Punchrotton.
Mornai.	Lakhipur.
Maijunga.	

Beyond the Province :—

Serajgunj.	Bhyrub Bazar.
Goalundo.	Dacca.
Mymensingh.	

19. The sale of timber in the markets within the Province generally commences in October, and lasts through November and part of December.

Kinds of timber.

20. The kinds of timber removed at present are almost exclusively Sâl and Jarul. The felling of the latter kind of timber only commenced a few years back, when Sâl of large size became scarce, or was not procurable at all; and at present, for the same reason, Jarul timber, when the logs are sound and cylindrical, fetches higher prices than Sâl, because they are, as a rule, of greater girth.

Prices of timber.

21. The timber sold in the above timber-markets is of the following dimensions, and now fetches the prices given below, as compared with 1865 :—

Names of logs.	Girth.	Length.	Market value in 1865, per pair.		Market value in 1875, per pair.	
Dhums	4 to 8 feet.	7 to 8 feet.	Rs.	8	Rs.	10 to 16
Gols	2 to 3 „	15 to 20 „	„	2 to 2-8	„	7 to 8
Dhams	1½ to 2 „	24 to 30 „	„	1	„	2 to 3

This is as near as the price of timber can be compared; but, not only has there been a great increase in the value of the different descriptions of logs, but they have much deteriorated in quality and size as well. On this account (the deterioration of Sâl through excessive fellings), Jarul is now much sought for.

Uses made of timber.

22. Of the above descriptions of logs, the "Dhums" are chiefly used for planks for boat-building, in fact, they are fit for little else. The other two kinds are mainly used for house-posts by the wealthier classes of natives in Bengal.

No timber for larger constructions, such as buildings in Calcutta, or bridges in this Province, is worked out from the Gáro Hills by the timber-cutters or duffadars, unless special arrangement is made before.

23. The duffadars are chiefly Meechies from the Goálpára plains, who procure money from the traders in the bazars, after making an arrangement regarding a division of the timber worked out, or of the profits derived from its sale. The Meech duffadars, again, employ coolies of their own class from the plains to work out the timber entirely by manual labour. Gáros, as a rule, do no timber work.

Revenue from timber.

24. The revenue from timber is charged at present on the log, at the rate of Rs. 2 each, after it has reached the general market, where it is sold, together with the timber brought from the estates of the Bijni and Mechpara zemindars. There is no check at present in the forests as regards the number of trees removed, or the size of the trees felled.

25. A great demand exists for bamboos from the Gáro Hills, especially in the south and west, where the people from the plains procure them from the outer hills, and pay often very high for them. There is no fixed general tax on this account for the cutting of bamboos; the Deputy-Commissioner, who collects this revenue, regulates the tax put on bamboos according to the demand there is in the different localities.

26. Before the British Government took possession of the Gáro Hills, forest revenue was realized on a great variety of produce, some of which, such as cotton, was plainly agricultural, and others, such as a tax on birds (*mainas*), so petty, that this practice was discontinued; and now forest revenue is only collected on timber, boats (dug-outs), and bamboos.

27. There is a small fee, called the "murung," paid to the lashkurs, or headmen of the Gáro communities, to appease the deities under whose particular protection large Sâl-trees are supposed to grow; but this is not recognized at present by the Deputy-Commissioner of the district.

Destruction of forests

28. The two great dangers to which the forests in the Gáro Hills are exposed are, as everywhere else in Lower Assam, jhooming and fire. The former of these, the Deputy-Commissioner thinks, could be stopped in the more valuable Sâl forests with very little, if any, cost to the State, as

the land on which Sâl grows is, as a rule, inferior to that on which mixed forests thrive,—and there are large areas of the latter as yet not used for this cultivation; but it will require time and great caution to bring about this desirable change.

The protection of the Sâl forest against fire will be a much more difficult task; but as in some parts of these hills fire-protection is carried out with a view of protecting the vegetation on fields to be jhoomed thereafter, there is even hope for this measure succeeding better in the Gáro Hills than almost anywhere else.

29. There is no danger from fire in the mixed lower hill forests on the central range, and all that is necessary for the present to preserve this forest is its demarcation by a boundary-path, running along the base of this range, and declaring it a forest "reserve." This is a most desirable measure, for economic reasons, since the sources of most of the streams in the Gáro Hills are situated in this forest. Its conservation was initiated some years ago by the Deputy-Commissioner, who has frequently explained the reason for the maintenance of this forest to the people, and finds they appreciate this important measure. From the comparatively close proximity of the Gáro Hills to the great timber-markets of Bengal, the Sâl forests are of exceptional importance and value.

SECTION II.—RESERVES.

30. The usual tabular statement of forest reserves in the Province, attached to this Report, shows the areas added during the year under review; and a short description of these reserves, under the prescribed heads, in given in Appendix II.—"Register of Reserves."

The reserves added during the year were the following :—

In the Gauháti Division.

Second addition to the Borduar Reserve.

In the Tezpur Division.

(1.) The Bhamaraguri Hill Reserves.
(2.) The Garumari Sâl Forest.
(3.) The Charduar Rubber Plantation Reserve (east of the Diputa River).

In the Goálpára Division.

(1.) The Bijni Duar Reserve.
(2.) The Cheerang Duar Reserves.
(3.) The Ripu Duar Reserve.
(4.) The Goma Duar Reserve.

Under Civil Officers.

The Charduar Rubber Plantation Reserve (west of the Diputa River).

GAUHATI DIVISION.

31. The new reserve added during the year was demarcated, and a commencement was made in the Milmillia reserve to increase the number of boundary-mounds, and to improve them by having a strong Sâl post placed in the centre of each, on which it is intended to have current numbers for easy recognition of the particular position of each, these numbers being also entered on the map of the reserve.

Protection from fire.

32. The same efforts were made to keep the fire out of the reserves as had been done in previous years, by cutting fire-paths of fifty feet in width, and employing twenty-seven extra fire-watchers during the months of January, February, March, and April; but they were not as successful as the year before, inasmuch as one of the reserves, the "Milmillia Sâl forest," was almost entirely burned, and the fire got also into the Pantan and Kulsi plantation reserves, and burned portions of these as well. This is much to be regretted, but not attributable to any want of attention from Mr. Mein, or his subordinates either, all of whom made extreme efforts to keep out the fires, and no doubt thereby saved all that has not been burned, as exhibited in the annexed tabular statement. But the great luxuriance

44. During the year, three cases of forest-trespass were tried in the Golághát division, in which seven persons were concerned and convicted.

Improvement of forests.

45. The intended experiment of sowing Nahor (*Mesua ferrea*) in the Nambor reserve could not be carried out, since the seed of this species was not procurable in the year under review, the trees having borne scarcely any in this part of the Province.

GOALPARA DIVISION.

46. The proposals to have the Government open forests in the Bijni, Cherang, Ripu, and Goma Duars of the Goálpára district declared forest reserves under Act VII. of 1865, were sanctioned by the Chief Commissioner during the year, and they are now as strictly protected as the very limited establishments permit, which, although not as effective as they should be, can do very much more now that these forests are "reserves" than was possible as long as they remained open forests.

They were gazetted in November, 1875. Their boundaries, area, and a general description, are given in the register of reserves, Appendix II., attached to this report.

The total area of reserves in the Eastern Duars, Goálpára district, gazetted up to the end of 1875-76, is 348 square miles.

Delay in the introduction of strict conservancy.

47. These forests were first inspected and reported on in 1868, and proposals regarding their management submitted by the Conservator of Forests to the Government of Bengal. These proposals were approved generally by the Government of India, and afterwards by the Secretary of State.

The papers above referred to are printed in a selection of despatches to and from the Secretary of State for India, regarding Forest Conservancy in India, laid before the House of Commons, page 916 to 923.

48. They, however, remained almost without protection until 1872, when they were declared open forests under Act VII. of 1865 and the Bengal Forest Rules of 1871. The natural consequence of no stricter conservancy measures having been introduced sooner has been the annual burning of the forests by woodcutters and villagers, and increased jhooming in many parts; until Colonel Keatinge, during the year under review, recognised the urgent necessity for having these forests, which are the most valuable in Assam, made exclusively State forests, and to conserve them strictly.

Timber in the forests.

49. Nearly all the mature timber was felled in the Sâl forests before the Duars were taken possession of by Government from the Bhutias, and there are now but a few scattered trees left, measuring over five feet in girth. With Sam (*Artocarpus Chaplasha*) and Tita Champa (*Michelia Champaca*), in the lower hill forests, which are, next to Sâl, the most valuable kinds growing in the Eastern Duars, it is not much better. Still, even the scanty protection given to these forests since they were first inspected, in 1868, has told on them, and is at once perceptible, when they are compared with the private forests on the permanently-settled lands.

There are, however, considerable quantities of dead Sâl-wood of small dimensions in these forests, which are being worked out now by the wood-cutters or duffadars on permits under the control of the Forest Department.

Private forests.

50. Mr. Fisher, the Assistant-Conservator in charge, not being aware of the proposals made in 1869 to lease the Purbutjhar forests from the zemindar, which were also recorded in the above-quoted despatches, has again drawn attention to the latter forests: and, although they would even now be worth exchanging for other waste lands, they are a mere wreck of what they were in 1868.

Boundaries of the forests.

51. The reserves in the Eastern Duars were surveyed and demarcated, and mapped by the Revenue Survey in 1869; but, as this demarcation is insufficient for proper forest management, the boundary-mounds will be increased and renewed next cold season. The survey made by the Revenue Survey,

as a matter of course, shows no detail regarding the different descriptions of forests; and a survey to obtain this information will be made now by this department as expeditiously as possible.

Survey.

52. A very good beginning in this work has been made during the last season by Messrs. Fisher and D'Arcy in the Sidli Duar, where 15,716 acres were surveyed and divided into blocks, compartments, and sub-compartments, which, besides being the first step to organizing these forests, will be of immediate advantage, as it facilitates the control over the removal of the dead timber from these forests, and renders the fire-protection, as well as the general management of them at once more practicable.

Demarcation and mapping.

53. Demarcation, in a substantial manner, of the boundaries of this forest and the village lands within it, has been carried out at the same time, and a map been prepared by these two officers on a scale of four inches to the mile,—copy of which, on the reduced scale of one inch to the mile, is appended to this report.

Area.

54. An area statement of the compartments has been entered on the map. The area of the sub-compartments is approximately shown on the map by different colours only, and not in the area statement, since the actual survey of all the lines of the sub-compartments is a work of much time and expenditure, which cannot be afforded, at any rate not until this general survey of all the reserves has been completed, and the utility of which, for the present at least, is doubtful, considering the condition of the forests, and that the outlines of the sub-compartments will not be permanent ones. The areas of the different descriptions of forest have been calculated from the surveys made by this department, along the lines dividing the forest into compartments; and the areas of the village lands have been calculated from actual surveys made by this department, and the Revenue Survey maps on the scale of four inches to the mile, which are recorded in the office of the Deputy-Commissioner of the district.

Valuations.

55. In two blocks out of the three surveyed this season, valuations of the growing material were made in the most careful manner along all the lines dividing these forests into compartments, and extended over 835 acres, or 5·31 per cent. of the total area. These valuation surveys are recorded in Appendix III. of this report, and show the number of Sâl-trees, exclusive of saplings, under one cubit, on a hundred acres to be as follows, if only the area of Sâl forests is taken:—

Second-class trees	4,428
Third-class „	603
Fourth-class „	23

If both lower hill forests and grass-lands are included, the number of Sâl-trees above one cubit in girth on a hundred acres is as follows:—

Second-class trees	2,896
Third-class „	394
Fourth-class „	15

56. The procedure followed in making the valuation surveys was that the lines dividing the forest into compartments were first cut one mile apart; these lines were chained, and a strip of forest, two chains in width, was then first marked off, and afterwards all the trees of different sizes met on this strip counted. The area of each description of forest and grass-land, as met with on these lines, was registered at once.

Age of trees.

57. In addition to this, Mr. Fisher has also counted the concentric rings in twenty Sâl-trees in these forests, which countings are shown in Appendix IV. It is intended to continue this survey work in a systematic manner over all the reserves, as funds are granted for the purpose. It is a most important and necessary work to remove these valuable forests beyond any further risk of alienation, or even deterioration, and is preparatory to compiling a preliminary working plan for them.

The above work was commenced in the Sidli Duar forests; as the village lands south and east of them had first to be surveyed and demarcated, before the forests could be gazetted as reserves, and it was most desirable that no further delay should occur in having this done.

Fire-protection.

58. The fire-protection will be exceptionally difficult in the Eastern Duars, since there are enormous areas of land surrounding our forests, on which the grass grows to a height of 6 to 10 feet and more, and, if once alight, it will be very difficult to put out. The fires originate at present in the forests chiefly with the woodcutters, who set fire to the grass to enable them to find and remove the dead timber. This can be prevented by an insertion in the permit of severe penalties, and by imposing them regularly, and not letting them remain a dead-letter only.

Different it is in cases where fire is set to the dried jungle on newly-cleared fields by villagers, and allowed to spread; or where this is done in the neighbourhood of villages or village roads by the people, in which case it will require time, and patient teaching of the villagers by Forest and Civil officers, which will be of more effect than all the fire-strips this department can make. This object cannot be attained in a year, or several years: but the sooner a beginning is made, the better and the earlier shall we see the people understand it.

The hunters, who go out in parties of ten to twenty and more, also set fire in the most reckless manner to everything that is in their way to get at the game. This, it is also believed, can be easily stopped; or rather it can be insisted upon that the hunters prevent the spreading of such fires, if the civil authorities give their earnest support to such measures.

Fire-protection will not only be difficult, but also expensive, in the Eastern Duars. But as this is, besides the survey, demarcation, and organization of the forests, almost the only expensive measure contemplated for years to come, there is hope that funds for this purpose will also be granted by the Supreme Government.

Buildings.

59. In the Goálpára division, as in all others in Assam, fevers are prevalent at some seasons of the year, and distances are great, and tents more or less unsuited for travelling, and too expensive to be used for the subordinate staff; for which reasons, small inspection-huts for the divisional officer, and still cheaper ones for the subordinate establishments, have been erected in central localities in or near the forests at Patgaon, Gosaingaon, and Garubasa, but the latter one was not completed. In addition to these, one at Balatong and one at the Bijni reserve will be constructed during the coming season.

CACHAR DIVISION.

60. The proposals submitted to the Chief Commissioner, to have an area of 825 square miles of forest in the Cachar district declared forest reserves, were sanctioned, and description of boundaries submitted to the Deputy-Commissioner for verification. The same sanction could not be conferred by the Chief Commissioner regarding the forests in the Sylhet district, as the claims of the merishdars on these forests are still under investigation. On the proposals regarding the reserves in the Cachar division, as detailed in paragraphs 216 to 246 of last year's Annual Report, the Chief Commissioner issued, in March, 1876, the following orders:—

"The present system of granting permits for the felling of timber must remain in force, with such modifications as shall give the Forest Department the greatest possible power of control and supervision.

"For political and fiscal considerations, the Forest officer in charge of the tract bordering on the Lushai country, in which tract there are several tea-gardens, shall for the present be placed under the orders of the Deputy-Commissioner in all but technical matters.

"The reasons given for the conservancy of such forests as exist in Cachar and Sylhet appear to be unanswerable, and the reserving of the tracts proposed under Act VII. of 1865, are sanctioned. They will accordingly be gazetted, and the particulars of area, and other information, for this purpose, should be submitted as soon as possible.

"An Assistant-Conservator should be placed in charge of these forests, with his head-quarters at Silchar; and he should employ himself at first in studying the position and boundaries, and other particulars of his charge; and, in addition to his other work, be placed in charge of the collection of tolls on timber brought down the different rivers.

"Colonel Keatinge is not prepared to accept the proposal to establish a toll-ghat at Sonai Mukh as well as at Sealtek. If a toll were levied at Sonai Mukh, it might be necessary, as suggested, to exempt, partially or entirely, the timber exported from Manipur, and this exemption would in all probability give rise to many frauds. But, if Manipur timber is allowed an untaxed entrance into our territory, and an untaxed sale throughout the extensive district of Cachar, there can be no just cause for complaint, if, after a free passage of eighty miles from the Manipur boundary, it is taxed at Sealtek at the same rate as timber cut in British forests.

"The proposed rates of duty on timber, *viz.*, four annas per cubic foot of timber of the kinds marginally noted, and two annas per cubic foot of all other woods in the log, with an addition of 25 per cent. in the case of converted timber, are accepted. Tables of rates on logs of various sizes must, as suggested, be kept at the toll-station and at the Forest office for distribution.

Jarul.	Champa.
Nagessur.	Sill Kurta.
Cham.	Dollu Kurta.
Kuthâl.	Poma.

"The Chief Commissioner does not concur with the proposition to partially exempt Manipur timber from duty.

"Timber felled in private forests should continue to pass free, and the rate on bamboos, canes, and thatching-grass should be as marginally noted, and on charcoal two annas per maund. The rate on charcoal can, as suggested, be either levied at the toll-station, or at the time of application for a pass to remove it by land. The forest officers should be careful to restrict the felling of trees for charcoal to inferior descriptions of wood.

	Rs.	As.	P.
Bamboos, per 1,000	1	4	0
Canes (jali and sundi), 100 bundles of seventy-six pieces each	1	8	0
Canes (gulla), ditto ditto	2	0	0
Grass, each raft	2	8	0

"A fee of Re. 1 from each woodcutter, on his permit to cut timber, bamboos, and cane for six months, will be levied, the names and other particulars of the permit-holders will be registered in a bound book in the Forest office. These permits should be for the half-year ending 30th June and 31st December only.

"The registration of elephants, as proposed, may be carried out as a necessary part of the system of getting all felling operations under control; but the fees levied must be merely nominal, *viz.*, Re. 1 per elephant per annum. The particulars of each elephant, and of its owner, should, as suggested, be kept in a bound register. Infringement of any condition of the permit or license would render a woodcutter or elephant-employer liable to punishment under the Forest Act.

"No woodcutters should be permitted to proceed beyond the 'Inner Line' without the sanction of the Deputy-Commissioner of the district."

Commencement of forest work.

61. In accordance with these orders, the officer in charge of the Cachar division, who only returned from Europe in February, 1876, has made himself, in the first instance, acquainted with the forests in his charge, and their boundaries, and took charge of the toll-collections at Sealtek ghât on the 1st of April, 1876. More could not be done before the end of the financial year, but fair progress has since then been made by Mr. Shakespear in organizing the new system.

Reserves under Civil Officers.

62. The only reserve forests in this Province as yet under the sole management of a district officer is the Chardnar Rubber plantation reserve (west of the Diputa River), consisting of lower hill forest situated immediately at the foot of the Akha Hills, which was declared a reserve to have ample forest land secured for extension of Caoutchouc plantations.

The Deputy-Conservator of Forests, or one of his Assistants, will once in the year inspect this forest, and report to the Chief Commissioner and the Deputy-Commissioner of the Darrang district.

SECTION III.—PLANTATIONS.

63. Plantations, like all other works in Assam, are, comparatively speaking, very expensive; and, since the areas already planted with exotic timber-trees, especially Teak, are sufficient to judge the suitability of the soil and climate of Assam for their cultivation by the Chief Commissioner does not consider it desirable to extend these timber-plantations of exotic trees, especially since the forest revenue is not large, and cannot be materially increased for years to come.

64. All the funds available are, in accordance with these orders, employed for the improvement of the natural forests, and, where necessary, the sowing and planting of indigenous trees. The experimental Teak plantation at Makum, which is simply protected, and not extended, has been made over to the charge of the Deputy-Commissioner of the Lakhimpur district. The Deputy-Conservator inspects this plantation once a year. The

Nungkhlao Cinchona plantations in the Khási Hills were placed during the year in charge of the Seim of Nungkhlao, who is now responsible for keeping the plantations free from fire and jungle. The Caoutchouc plantations at the Charduar, in the Tezpur forest division, are being extended as rapidly as funds granted for this work will permit. The usual tabular statement, showing the areas of plantations and the expenditure on them, is attached to this report.

GAUHATI DIVISION.

Caoutchouc Plantation.

65. The method of planting *Ficus elastica* at the Kulsi was described in last Annual Forest Report.

This plantation has been extended during the year under review by thirty acres. The fencing in of the trees became necessary, since the deer had found out the plants, and were very much after them, which has increased the expenditure slightly.

The plantation was inspected by the Deputy-Conservator in December, 1875, and the countings made showed the following results:—

Total number of planting-spots examined		1,494
Number of plants alive		1,292
„ failures		202
Percentage of plants alive	87	100
„ failures	13	

All vacancies in the older plantations were filled up.

A nursery for cuttings, to fill up vacancies in the thirty-acres extension of 1875-76, was also prepared and stocked.

The total expenditure during the year at the Kulsi on the planting of Caoutchouc-trees was as follows :—

	Rs.	A.	P.
Formation	236	7	9
Protection from fire	19	0	0
Improvement and conservation.	26	2	0
Fencing	230	15	0
Total ...	512	8	9

(2.) Timber Plantations.

Teak plantations.

66. The Teak plantations were extended by twenty acres during the year, which was done by preparing planting-spots 4 ft. by 4 ft., and putting out the Teak-seed direct at the stakes. This extension was made on the same hills where the plantation of 1874-75 is situated, and is the continuation of it. The seed did not germinate very well, and the young seedlings were attacked by grubs, and bitten off in large numbers just above the ground, so that the vacancies were very numerous in December, 1875, when the following countings were made by the Deputy-Conservator:—

Total number of planting-spots examined		342
Number of plants alive		84
„ failures		258
Percentage of plants alive	24	100
„ failures	76	

Since the beginning of the rains, however, many of these young bitten-off plants have sprung up again from the roots, and the vacancies are reported by Mr. Mein not to be more than 50 per cent., which are being filled up now.

The countings in the Teak plantation of 1874-75 gave the following results :—

Total number of planting-spots examined		1,086
Number of plants alive		841
„ failures		245
Percentage of plants alive	77	100
„ failures	23	

Here, also, all the vacancies were filled up after the commencement of the rains. The growth of the trees is excellent, but somewhat irregular in height, on account of the seed received from Burmah in 1874-75 having been so bad; this irregularity will, however, disappear in a year or two.

The growth of the trees in the plantations of 1872-73 and 1873-74 is equally good, and the ground well covered; there are a considerable number of them attacked by the borer, but the places injured are growing over well, and do not seem to prevent, at the Kulsi plantation at least, the trees increasing rapidly in size. The measurements of fifty trees in the above two plantations gave the following results :—

Plantation of 1872-73.

Average height, 21·2 feet.
Average girth, measured one foot above the ground, 10·1 inches.

Six out of the fifty trees measured were thirty feet in height.

Plantation of 1873-74.

Average height, 16·1 feet.
Average girth, measured one foot above the ground 8·2 inches.

In this plantation, the trees do not stand quite so regular, nor are they of such uniform height, but they are healthy and vigorous.

Any vacancies which occur in the Teak plantations are filled up with Poma (*Cedrela Toona*), Nahor (*Mesua-ferrea*), and Sisu (*Dalbergia Sissoo*).

The expenditure during the year on Teak plantations has been—

	Rs.	A.	P.
Formation	975	9	3
Protection from fire...	61	15	0
Improvement and conservation	323	4	3
Total ...	1,360	12	6

Sisu plantation.

67. No extension of the Sisu plantation has been made during the year; and it is not intended to make any more, since there remains no doubt that Sisu will grow first rate at the Kulsi. But plantations are expensive, and we have now in the Eastern Duars of the Goálpára district natural Sisu forests, the improvement of which, by efficient protection against fire, is of greater moment, and less expensive, than the planting of Sisu at the Kulsi.

The countings made in the existing Sisu plantation by the Deputy-Conservator in December, 1875, gave the following results :—

Total number of planting-spots examined		698
Number of plants alive		456
" failures		242
Percentage of plants alive	65	100
" failures	35	

These vacancies are owing to floods, and seedlings having been planted too young, as stated already in last year's report; but the latter are all being filled up now.

The expenditure on Sisu during the year has been as follows :—

	Rs.	A.	P.
Formation (nurseries)	18	10	0
Improvement and conservation	55	7	9
Total ...	74	1	9

TEZPUR DIVISION.

Charduar Caoutchouc plantation.

68. The main Caoutchouc plantation in Assam, situated in the Charduar, was described in full detail in last year's report; and the modes of propagating and planting, as then followed, remains the same now.

Propagation is carried on by means of cuttings and seed sown on beds covered with charcoal, and, whilst the cuttings make at once larger plants, and grow during the first year or two faster, the seedlings are hardier, and stand the transplanting better than the cuttings.

The area extended during the year under review was 140 acres, which were planted at distances of 25 feet in the lines, the latter being 100 feet from each other, measured from centre to centre of the lines.

Weeding necessary.

69. It was found during the year that the widening of the lines from 20 to 40 feet encouraged the growth of the weeds as well as that of the young Rubber-trees; and the necessity for cutting the jungle around the plants and on the inspection-paths twice has somewhat increased the expenditure,—but the estimated cost of Rs. 10 per acre, it is still believed, will cover all expenses.

Methods and time of planting in the ground.

70. Of the different methods of planting the Caoutchouc-trees, that of planting in the ground on small mounds of earth about three feet in height has up to the present answered best.

As far as last year's experience goes, the best time of transplanting seems to be November and December, just before the winter rains, which last about a week or a fortnight. But on this point more experience is necessary before the time of year best suited for transplanting can be positively fixed, and which no doubt will vary according to the country in which *Ficus elastica* is planted.

Well-rooted plants have a much better chance of succeeding than plants with short roots, which latter, as a rule are very brittle; this, of course, only applies to cuttings, and not to seedlings.

Planting on trees.

71. The planting in strong cane baskets, which were placed in the forks of trees, as described in paragraph 286 of last Annual Report, so far succeeded that the trees all lived; but they either remained stationary, or made one or two leaves only, which is attributed to the want of moisture in the soil put into these baskets, and also to the shade from above, which latter cannot be removed, or there would be no moisture at all kept in the soil about the roots of the young plant.

Although this mode of planting may eventually succeed, as far as the experiment has gone now, it does not look very hopeful, since it would never do to have plants remaining stationary, or nearly so, for five to ten years; and, for this reason, it is not intended to extend this mode of planting until a more accurate opinion can be formed regarding the rate of growth. The experience will be obtained from the plants already planted out in this way.

Inspection of plantation.

72. In December, 1875, the whole plantation was carefully inspected by the Deputy-Conservator, and the young trees looked all that could be wished, many of them having grown most vigorously. The countings made showed the following results:—

Total number of planting spots examined		4,539
Number of plants alive		4,122
Ditto failures		417
Percentage of plants alive	93	100
Ditto failures	7	

The vacancies were all filled up after the inspection had been made.

Fencing necessary.

73. Substantial fencing of the young trees has here, as in the Kulsi plantation, become necessary.

Bamuni Hill Caoutchouc plantation.

74. In the small Caoutchouc plantation on the Bamuni Hill near Tezpur, the growth had been very slow, although the plants looked healthy when inspected in December, 1875, by the Deputy-Conservator.

The countings made showed the following results:—

Total number of planting spots examined...		706
Number of plants alive		640
Ditto failures		66
Percentage of plants alive	90	100
Ditto failures	10	

75. Fire-strips of over 50 feet in width were cleared around this plantation ; but the fires, which were so prevalent this year everywhere, got into it, and burned most of the plants. They have nearly all made new shoots, and but few were killed, because the planting-spots were cleared around the plants as well; still this is a great danger to which plantations in grass-land are exposed. The vacancies existing in this plantation will be filled up next cold season.

Cost of Caoutchouc plantations.

76. The expenditure on Caoutchouc-planting in the Tezpur division during the year has been—

Charduar Plantation.

	Rs.	As.	P.
Formation	2,575	13	3
Protection from fire	2	8	0
Improvement and conservation	709	8	0
Fencing and enclosing	5	8	0
Total ...	3,293	5	3

Bamuni Hill Plantation.

	Rs.	As.	P.
Formation	110	14	0
Protection from fire	15	6	0
Improvement and conservation	68	10	0
Fencing and enclosing	23	0	0
Total ...	217	14	0

Yield of different varieties.

77. Inquiries into the difference of yield from the two varieties, the Bogi Bur and the Shika Bur, have again been made,—and it has now been stated that the Shika Bur is the best variety of the two. However, not much reliance can be placed on these statements; and, as already reported last year, the difference, if any, is not such as to make it advisable to give preference to either in making Caoutchouc plantations:—

Plantations under Civil Officers.

78. As already stated above, the experimental Teak plantation at Makum, measuring 4 acres, was made over to the charge of the Deputy-Commissioner of Lakhimpur, who manages it through the mouzahdar living on the spot. No extensions were made, and the pay of a watcher, on Rs. 7 a month, and Rs. 13-6-3 for weeding, was the only expenditure incurred on this plantation. It was inspected in January, 1876, by the Deputy-Conservator, and measurements made were as follow:—

Teak of 1869.

Average height per tree, 31·6 feet.
Average girth, measured one foot above the ground, 16·1 inches.

Teak of 1871.

Average height per tree, 26·6 feet.
Average girth, measured one foot above the ground, 11·1 inches.

Teak of 1872.

Average height per tree, 18·4 feet.
Average girth, measured one foot above the ground, 8·7 inches.

These measurements show that there is but a slight increase in the height of the trees, as compared with the measurements of the year before, which must, however, be expected, as young Teak-trees always grow exceptionally fast at first. The trees look otherwise healthy, and very vigorous, the only drawback being the borers, which have in 1875 been again more numerous and more destructive than usual in this plantation.

Shillong plantation.

79. The timber plantation lands near Shillong, leased in perpetuity at Rs. 50 per annum, payable in advance, since 1871-72, were surveyed by Mr. Fisher during the year, and found to be only 262·59 acres, instead of 580 acres, as originally supposed. The above rent is paid by the Forest Department.

Of the exotic trees tried on this plantation, only the following three kinds can be said to have done well :—

Juglans regia.
Eucalyptus rostrata.
Pinus maritima.

All the rest either suffered from frost in the winter, or required far more nursing than can be afforded them in forest plantations, where it has always to be kept in view that only the very simplest modes of planting have any chance of proving remunerative. The young trees of the indigenous Oak (*Quercus serrata*) were also attacked by rats, who bit off great numbers of the young trees just above the ground, and are still doing so, without any remedy having proved efficacious.

Sowings of *Pinus Kasya* have been made over an area of about 20 acres on the plantation lands, and look promising.

The Spanish-chestnuts did not thrive at the timber plantation, so were transferred to the Shillong farm for trial at a higher elevation.

80. Besides this, there are different patches of forests also leased in perpetuity at an annual rent, amounting in the aggregate to Rs. 375, payable in advance, the area of which has been estimated at about 796 acres, which are looked after by the Forest Department; but the rent is paid from Town Improvement Funds. The greater part of this land was secured by order of the Chief Commissioner, with a view of securing a permanent and better water-supply for the station of Shillong.

81. All the fields which had been cultivated by the Khásias within the above areas, and measuring about 80 acres, were sown by the Forest Department with *Pinus Kasya* and *Quercus Griffithii*, *Quercus serrata*, and *Quercus fenestrata*, which succeeded well; also, 8 acres were planted with different species of *Eucalyptus*.

82. The total expenditure on the Shillong timber plantation, and the different sowings made on the above lands, during the year has been:—

	Rs.	A.	P.
Shillong Timber Plantation.			
Formation	318	1	6
Protection from fire	24	8	0
Nongkhlao Cinchona Plantation.			
Improvement and conservation	352	0	0
Other Lands.			
Formation	636	3	0
Protection from fire	49	0	0
Improvement and conservation	45	6	6
Total ...	1,425	3	0

83. Orders were also issued by the Chief Commissioner to all Deputy-Commissioners to plant small areas, not exceeding one acre, within their stations, and exposed to the public view, for experiments regarding the rapidity of growth of different kinds of wood, which might be worth planting for the manufacture of charcoal.

SECTION IV.—OPEN FORESTS.

84. As already stated in Section I. of this report, the greater number of the forests in the Eastern Duars, Goálpára district, which had formerly been gazetted under Act VII. of 1865 as open forests, have now been declared reserves; the only exception being the Sidli forest, a portion of which was surveyed; and proposals to have this also declared a reserve will shortly be submitted to the Chief Commissioner for sanction.

Forests under district officers.

85. The very extensive forests administered by district officers within revenue limits, and estimated to cover an area of 3,409 square miles, although not gazetted as open forests under the Forest Act, are in every respect managed as such, and watched over as strictly as if they had been so gazetted. This is done by the mouzahdars, who are directly responsible for their safety, and each district officer has a forest-ranger and peons under him, who are employed in collecting any information regarding these forests, and the way in which they are managed by the mouzahdars, whenever it is desired by the district officer or his assistants.

86. The following are the rules laid down by the Chief Commissioner for the regulation of fellings of the twenty-nine kinds of timber quoted in paragraph 84 of last year's Forest Report, in the forests under the Deputy-Commissioners :—

"The felling of tax-paying timber otherwise than under these rules is forbidden.

"Any person desirous of felling any tax-paying timber shall apply to the Deputy-Commissioner, or the officer in charge of the sub-division, on unstamped paper in the Form A., given below, and shall at the same time tender the tax on the timber at the prescribed rate.

"If there is no objection to the felling of the timber applied for, the Deputy-Commissioner or sub-divisional officer shall receive the tax, and enter the particulars of the application on a register, which he shall keep in the said Form A. Having entered his initials on the application, he shall return it to the applicant, who shall take it to the forest-ranger, or, when the forest-ranger is not available, to such other officer as the Deputy-Commissioner or sub-divisional officer shall direct.

"The forest-ranger or other officer shall mark the trees to be felled, and shall note having done so in the application.

"When the trees are felled, the feller shall apply to the mouzahdar of the mouzah in which they have been felled, to whom he should show his application form, and the mouzahdar shall mark the logs with the number they bear in a register which he shall keep in Form D. The mouzahdar shall then give the feller a certificate in Form B., and shall permit the logs to be removed.

"If any person wishes to bring timber of any of the tax-paying descriptions felled in any locality to which these rules are not extended within the boundaries of any district to which these rules are extended, he shall make application verbally or in writing to the mouzahdar of the first mouzah of any such district into which he may import the timber. The mouzahdar shall mark the logs with the numbers they bear in his register D., and give the importer a certificate in form C.

"Any tax-paying timber found in the possession of any person without mark, or in excess of the number entered in his certificate, will be attached and sold, and the proceeds credited to Government.

"Any person who has lawfully felled tax-paying timber within la-khiraj or waste land grants, for the purpose of exporting it beyond the boundaries of such grants, should apply to the mouzahdar of the mouzah within which such grants are situated, and on receipt of such application the mouzahdar shall proceed as directed in Rule 7."

A.

Application for permission to fell Timber in the District of

1	2	3	4	5	6	7	8	9	10	11
Consecutive No.	Name and residence of the applicant.	Description of trees which applicant wishes to fell.	Mouzah.	Locality.	Number of each description.	Girth five feet over the ground (to be given in feet).	Tax realised	Signature of Treasurer and date.	Signature of officer granting the application.	Signature of forest-ranger or other officer marking the trees to be felled.

B.

Mouzahdar's Certificate showing Timber cut by A. B., in the Mouzah of *District.*

1	2	3	4	5	6	7
Name and residence of woodcutter.	Locality.	Description of trees felled.	Nos. which the logs bear in Register D.	Number felled.	Girth five feet above the ground (to be given in feet).	Mouzahdar's signature and date.

C.

Mouzahdar's Certificate, showing Trees imported into Mouzah *by A. B.*

1	2	3	4	5	6	7
Name and residence of importer.	Locality whence imported.	Description of timber.	Nos. which the logs bear in Register D.	Number imported.	Length and girth of the logs in feet.	Mouzahdar's signature and date.

D.

Register showing the Timber felled in or imported into Mouzah *District*
during the year 187 -187

1	2	3	4	5	6
Name and residence of woodcutter or importer.	Locality where the timber is felled (if felled).	Description of timber.	Girth five feet over the ground (if felled) or length and girth of log (if imported).	Consecutive No. marked on each log.	REMARKS.
April, 187					

* *N.B.*—The name of the month should be entered in red ink.

Forests in the Khási and Jaintiá Hills.

87. In the Khási and Jaintiá Hills, the Deputy-Commissioner has again during the year called the attention of the native chiefs and their people to the resolution issued by the Chief Commissioner, regarding the absence of timber forests in these hills, which had been widely circulated in the previous year, with a view to prevent the indiscriminate burning of forests.

All seims, dolois, sirdars, and lyndohs of the Khási and Jaintiá Hills were called upon by proclamation to take steps to prevent injury to the ancient sacred groves, and to mark off forest reserves.

Rights and privileges in Government Forests.

88. A despatch from Her Majesty's Secretary of State for India, No. 11 (Revenue—Forests), dated the 8th October, 1874, together with Government letter No. 37C., dated the 3rd March, 1875, referring to recording of rights and privileges burdening Government forests, and the prevention of the growth of such rights in the future, were circulated in May, 1875, to all Deputy-Commissioners in the Province.

Jhoom cultivation.

89. An extract of the proceedings of the Forest Conference, held at Allahabad in January, 1874, referring to the jhoom cultivation, was circulated, by order of the Chief Commissioner, to all Deputy-Commissioners, and the Educational and Public Works Departments as well.

90. With a view of protecting the forests under the Deputy-Commissioners generally, and to restrict the practice of jhooming, the Chief Commissioner issued a circular to those Deputy-Commissioners in whose districts jhooming was chiefly practised, and, after having received their replies, issued the following orders :—

(1.) Whenever any house-, hoe-, or poll-tax-paying village, or any family of such a village, changes its residence and its cultivation, the village or family must pay double the annual tax for the year of migration.

(2.) Whenever such a village or family entirely changes the site of its cultivation without abandoning its site of residence, the village or family must pay an additional tax of 50 per cent. on the ordinary annual tax for the year of change.

SECTION V.—YIELD OF THE FORESTS.

GAUHATI DIVISION.

91. The yield of the forests in this division is chiefly Sâl-timber, brought out by the department into a sale-depôt at Kukurmara, on the Kulsi River, which timber has hitherto been almost entirely required by the Department of Public Works. But, as nearly all the bridges on the Assam Trunk Road have been completed, Sâl-logs in short lengths, required in Bengal for boat-building, will in future also be brought to depôt.

Timber brought to depôt.

92. During the year under notice, 400 trees were felled in the Pántán reserve, and cut into 713 logs, 320 of which, together with 54 logs remaining in the forests from last year, were brought into the Kukurmara sale-depôt, leaving 393 logs in the forest at the end of the year.

The above 374 logs measured, in the aggregate, 8,884 cubic feet 1 inch. The sales in this depôt during the year amounted to 181 logs, measuring 5,609 cubic feet 3 inches, and realized Rs. 4,792-13-8, or an average of 13 annas 8 pie per cubic foot.

The expenditure on working out the above timber, and bringing it into depôt, has been the following :—

	Rs.	A.	P.
Felling and floating	559	5	0
Dragging (estimated)	819	10	2
Total ...	1,378	15	2

or 2 annas 5 pie per cubic foot.

The net profit, exclusive of permanent establishments, on the timber sold is therefore 12 annas 3 pie per cubic foot.

The stock remaining in the Kukurmara depôt on the 1st April, 1876, was 331 logs, measuring 7,656 cubic feet 2 inches.

The three boats (dug-outs) which had been cut in the previous year have been transferred from the timber account to the store account,—they being used by the department for floating purposes.

Timber removed by purchasers.

93. The sale of trees standing in the forests has increased from 2 to 65 during the year, which latter realized, in the aggregate, Rs. 513. They were all used for cutting boats (dug-outs), since, on account of the difficulty of working out the timber from the reserves, no private people engage in timber trade.

Besides this, 52 dead Sâl-posts were sold in the forest, and realized, in the aggregate, Rs. 35-8, and 294 small pieces, sold at 2 annas each, or an aggregate amount of Rs. 36-12.

TEZPUR DIVISION.

94. The timber brought to depôt during the year in this division was the following :—

	c.ft.	in.
208 Sâl-logs, measuring	1,334	6
4 pieces of converted Sâl-timber, measuring ...	11	2
16 Ajhár-logs, measuring	208	10
319 pieces of converted Ajhár-timber, measuring ...	774	9
8 Pomá-logs, measuring	97	9
Total ...	2,427	0

The total expenditure on the above timber during the year has been—

	Rs.	As.	P.
Felling, floating, and converting	1,069	0	3
Dragging (estimated)	297	12	2
Total ...	1,366	12	5

or nine annas per cubic foot.

The revenue realized during the year in this division by the sale of 1,708 cubic feet 6 inches out of the above timber, and former stock, was Rs. 1,571-13-3, or 14 annas 8 pie per cubic foot, which is a net profit of 5 annas 8 pie per cubic foot.

No minor produce was removed from the forests in this division.

GOLAGHAT DIVISION.

95. The timber operations in this division are limited to indents received from public departments, or private individuals, since it is not advisable to keep any other kinds of timber but Sâl in depôts, as they are subject to rapid deterioration; and, for this reason, the timber worked out of the forests in this division has been but very limited, as enumerated below :—

	Cubic feet.
66 Ajhár-logs, measuring	2,354
5 Nahor logs, „	180

The cost of working out this timber has been—

	Rs.	As.	P.
Felling and floating	307	6	6
Dragging (estimated)	170	4	5
Total ...	477	10	11

or 3 annas per cubic foot.

All first-class timber brought into the Golághát depôt is sold at 12 annas the cubic foot, and second-class timber by the log for whatever it will fetch. Second-class wood consists of the upper portions of trees, which are only brought to depôt when a demand for them is probable.

The total amount of first-class timber sold from the Golághát depôt was 2,503 cubic feet, at 12 annas per cubic foot, and fifty cubic feet at Re. 1 per cubic foot; the latter being selected timber, 2,456 cubic feet of which were made over to the Department of Public Works, and adjusted by book-transfer. Besides this, there were sold 156 second-class logs, which realized, in the aggregate, Rs. 644. Twenty-eight first-class logs were set aside in the Golághát depôt, to be used in the building of a forest-house and office in this depôt for the Divisional Forest officer.

The estimates of cost of dragging timber in this and other divisions were made in the manner described in paragraph 323 of last year's report.

GOALPARA DIVISION.

96. The working out of the dead Sâl-wood from the Government forests in the Eastern Duars has been carried on actively by the duffadars, or woodcutters, during

the cold season, and the timber brought out, or on its way out, is estimated to amount to 20,000 posts. But, as the revenue on this timber was not collected before the end of the year, an account of this yield will not be given until next annual report is submitted. Before the end of the year under notice, 517 pieces of dead wood were removed, on which Rs. 297 were realized; also fifty-six trees were sold standing in the forest for the cutting of boats or dugouts, and realized Rs. 192. The yield from these forests must for many years to come remain small, since the mature trees have nearly all been worked out, and the dead wood from these forests will also be removed rapidly after this, and not last more than a few years.

97. A tax has up to the present been levied by the zemindars, on whose estates timber was landed, on its way to the Brahmaputra, and the value of timber from the Government forests been thus depreciated. This has been under investigation during the year, and the Chief Commissioner has decided that land is to be taken up on account of Government, for the purpose of landing and stacking timber, to do away with this imposition.

Timber trade in the Goálpára district.

98. Interesting information has been collected by Mr. Fisher, regarding the timber trade in the Goálpára district, both from Government and private forests, which will be useful to other Forest officers in the Province as well, and is as follows :—

"Timber work is carried on by Mechis and Gáros, who go into the forests in the cold season in parties of fifteen to twenty, under a duffadar, and float the timber down to the large rivers in August. The duffadar advances money for expenses to the timber-cutters, and receives half the price realized for the timber. The duffadars generally sell the timber to local merchants, who forward it to Goalundo, and other places on the Lower Brahmaputra, and also to Dacca and Calcutta. Only Sâl and Sam timber is brought to the market, but the latter is getting very rare. The larger trees are cut into lengths of seven to eight feet, which are called "dhums," and are largely used in Lower Bengal for boat-building. The other pieces brought to the market are classed as pucka or kutcha, according as the sap-wood is rejected or retained.

"The pucka timber consists of—

	Length in feet.	Girth in feet.
Guniseri	7 to 12	1½
Dakwal	15 to 18	1½ to 3
Dosti	21	1½ to 3

"These are mostly dead timbers, of which the sap-wood has disappeared, from exposure. It is stated that the timber is now of such bad quality that of 100 logs of pucka timber, not more than half will really be free from sap-wood.

"The kutcha timber consists, besides dhums, of the following:—

	Length in feet.	Girth in feet.
Bishati	30	3
Mastul	30 to 38	3 to 4½
Gul	16	2 to 3
Dham	24	1½

"The latter is used for fastening across the boats, and suspending the timber from, so that it is submerged.

Floating of timber.

"The boats employed in the timber-trade are either up-country boats, with Hindi boatmen, called *Patalas*, or Bengali boats, called *Bajras* and *Panshis*. The patalas and bajras have crews of ten to thirteen men, and can float 200 pairs of dhums. The panshis have only four men, and carry 50 to 80 pairs. The rates charged for floating from Bogribari to Goalundo are Rs. 2-8 to Rs. 3 per pair. To allow for differences in the dimensions of the timber, the following conversion is allowed:—six dakwals, four dosties, and three small dhums, respectively, counting as a pair of full-sized dhums.

"With four loaded boats it is necessary to take a *jalpana*, or small boat with two men, for soundings and repairs to binding-tackle, &c. This costs Rs. 15 to Rs. 20 a month.

"The cost of sending dhums to Goalundo from Bogribari is given below :—

	Rs.	As.	P.
400 pairs of dhums, at Rs. 2-12 each pair	1,100	0	0
24 " dhums " 1-8 "	36	0	0
Hire of jalpana for twenty days, at Rs. 15 per month	10	0	0
Thirty-two maunds of jute, at Rs. 5, for fastening dhums	160	0	0
Total ...	1,306	0	0

Or Re. 1-10-3 per dhum.

Cutting of boats or dugouts.

"There is a considerable trade in dugouts in the district, but the larger ones formerly brought to the market are no longer procurable, except from Upper Assam. The better kinds of trees for this purpose are Sam, Tita Sappa, Koroi, Gomari, Jamu, and Hilika. Sâl is not so highly valued, as, if the water gets in, the boat is liable to

sink with its cargo; it probably surpasses the others, however, in last. As the harder species get rarer, all kinds of soft woods are used, such as Gugera, Patamari, Poma, Paroli, &c. The boats are measured on the inside along the girth, and from edge to edge. The dimensions range from two-and-a-half to four hands for boats cut in the Goálpára district. Those of four hands will carry about 60 maunds. If well made, and of hard wood, the price at the market will be Re. 1 to 1-8 per maund. Those made of the softer woods fetch from 8 to 12 annas per maund.

Sources of supply.

"The following are the principal sources of supply of timber:-

On the North Bank.

(1.) Government forests in the Duars.
(2.) Zemindari forests of Purbutjhar.
(3.) Forests in Khuntaghat, belonging to the Bijni zemindar.
(4.) Bhutan forests.

On the South Bank.

(5.) Government forests in the Gáro Hills.
(6.) Forests in Mechpara zemindari.
(7.) Forests in Habraghat, belonging to the Bijni zemindari.

"The Purbutjhar forests yield a quantity of inferior timber under 3 feet in girth, principally used for house-posts.

"The Bhutan timber is brought down by Meech duffadars, who take their men up to the hills in the dry season.

"The Bhutia Agent, who gives licenses, states that last year twenty-five parties went up to fell timber. The charge is Rs. 5 per axe, and Rs. 4 from each duffadar.

"He also states that the timber is getting inaccessible, and that the number of licenses given is diminishing. The quantity of Bhutan timber brought down last year to Bogribari was—

Sâl dhums	4,797
Sam „	387
Total ...	5,184

"These sell at an average rate of Rs. 10-8 per pair.

"Fellings have been excessive for years in the private forests of the Purbutjhar, and numbers of woodcutters search the forest every year for timber, felling every tree which they consider saleable; the lower standard of girth, at five feet from the ground, being now reduced to 2 feet 6 inches.

"Last year, according to the zemindari books shown to me by the dewan, 110,000 logs were received at the ghats of Silai and Bogribari.

"They receive from the woodcutter Rs. 40 per hundred for dhums, and from Rs. 13-4 to Rs. 28 for small posts, according to dimensions. They also take a "Salami" of Rs. 6-4 per hundred rupees, which the woodmen receive from the merchants. The timber from the Purbutjhar is considered of inferior quality, and fetches the following prices at Bogribari, from the boatmen who come from Mymensing, Goalundo, Dacca, &c.

Dhums of 6 feet to 8 feet length ...	per pair, Re. 1 to Rs. 2, according to girth.
House-posts, mostly kutcha ...	per hundred, Rs. 100 to 200, according to girth and length.

"The proprietors are at no expense whatever for their forests, receiving the charges for the timber from the woodmen at the ghats."

CACHAR DIVISION.

99. The direct control by the officer in charge of this division over the yield of the Cachar forests was only assumed on the 1st April, 1876, up to which time the Deputy-Commissioner of the district collected this information, which was reported as follows :—

"Timber cut during the year ... ... 14,894 logs and 395 pieces."

Besides this, permits to collect forest produce were granted, the fees for which amounted during 1875-76, in the aggregate, to Rs. 1,690. Confiscated timber was sold to the amount of Rs. 72, and the right to cut thatching-grass was sold by public auction for Rs. 106.

Forests under Civil Officers.

Tax-paying trees.

100. As stated in the previous section of this report, rules for regulating the felling of tax-paying trees in these forests were issued by the Chief Commissioner during the current year, and some time must naturally elapse before they are thoroughly understood and work smoothly, and the statistical information collected under these rules is, for the same reason, not as complete as it might be. All this will improve as the management of these forests advances, and the new rules are applied. The system of forest accounts, as rendered by the district officers, is also defective, which has been brought to the notice of the Chief Commissioner. In a

year or two there is every hope that the statistical information regarding the yield from the vast areas of forest directly managed by the district officers will be as complete as that now being collected regarding the forests in charge of forest officers.

The quantity of timber sold, as reported by the Deputy-Commissioners of the different districts, is noted below:—

	Logs.	Pieces.
Kámrúp	928	23
Darrang	680	...
Nowgong	310	68
Sibságar	136	...
Lakhimpur	62	...
Nága Hills	4	...

Other forest produce free of tax.

101. Large quantities of forest produce, such as those kinds of trees not included within the twenty-nine kinds quoted in paragraph 84 of last year's report, but for which there is a good demand in the Province, and firewood for the steamers on the Brahmaputra, are removed from the forests under the district officers as yet free of charge, and are not subject to the rules for felling tax-paying timber; so that no information regarding this yield from the Government forests is available. Regarding this, proposals were also submitted, and are under the consideration of the Chief Commissioner.

Trade in tea-boxes.

102. With a view of ascertaining the quantities of inferior woods required in this Province for the manufacture of tea-boxes and firewood, and how far these requirements are supplied at present from the forests in this Province, and how far from other provinces, statistics were collected during the year from the two trading-steamer companies in the Province, which are exhibited in a tabular statement attached to this report (Appendix V.)

The difference between the import of tea-boxes and export of tea will give the probable number of boxes manufactured in the Province, except breakages occurring whilst the tea-boxes imported are in transit. It will thus be seen that only 1,384 boxes appear to have been manufactured in Assam Proper in 1875, whilst 137,102 were consumed; and in Sylhet and Cachar 47,938 were manufactured, out of the total of 54,381 consumed.

The number of tea-boxes manufactured by the Keatinge Saw-mill in Cachar during 1875 was 5,474.

The Dehing Saw-mill was not working regularly in the early months of 1875, for which reason the agents did not give the outturn of 1875; but they were good enough to furnish the outturn of the Mill from June, 1875, to May, 1876, which amounted to 13,504 tea-boxes.

These figures show that Sylhet and Cachar import very little, and manufacture nearly all boxes at home, whilst Assam Proper imports nearly the whole of her tea-boxes from Calcutta and Kushtia. The reason for this cannot be explained, otherwise than by want of enterprise in Assam Proper, since there are very extensive forests as favourably situated as in Sylhet and Cachar, and up to the present the Dehing Saw-mill has paid no tax whatsoever on the inferior woods obtained from the Government forests, which are used for the manufacture of tea-boxes.

Firewood.

103. The amount of firewood bought during 1875 by the two trading-steamer companies in Assam Proper was as follows:—

	Maunds.
By India General Steam Navigation Company	30,880
By Rivers Steamer Navigation Company	16,030

The Cachar steamers do not burn firewood.

SECTION VI.—FINANCIAL.

104. When considering the financial results of the Forest Department, it has to be remembered that in this Province much forest produce is removed from the forests

without payment, since ryots are allowed to supply all their wants free of charge from the Government forests, except the reserves. Grazing-dues are unknown, and grass, timber, bamboos, firewood, and, in fact, almost everything except tax-paying timber (twenty-nine kinds) is removed, even for the purpose of trade, free of payment. All forest produce consumed in Cachar is free, with the exception of a fee of one rupee paid by every woodcutter for six months, and one rupee per annum for every elephant dragging timber. Thus, the communities at large, and even traders, have enjoyed, and are enjoying, great advantages from the forests which do not appear in the accounts. The valuable Sâl forests in the valley districts had nearly all been worked out before conservancy commenced, and require many years' rest and care before fellings can be recommenced in them; and the demand for the other reserved trees is as yet very limited, and confined to the Province. Naturally, these valuable, but exhausted, forests are under the management of forest officers, as they require the most care, and on these almost all the expenditure of the department is at present incurred, which makes the forest divisions appear in a very unfavourable light, when the results of the year's work is shown in figures, and a balance is struck between receipts and expenditure. For all this, it will be seen from the figures below that the total receipts from the forests in the Province have increased during the year by Rs. 41,352, even exclusive of the revenue from Soom forests, which has by mistake been credited in the Civil Account Department to Land Revenue."

105. The summary of revenue and expenditure (Form No. 28) attached to this report was furnished by the Deputy-Accountant-General, and the omission of the revenue from Soom forests from the forest accounts has been brought to the notice of the Chief Commissioner.

106. The budget estimate, regular estimate, and actuals of the year stand as follows :—

		Budget Estimate.	Regular Estimate.	Actuals.
		Rs.	Rs.	Rs.
Receipts		85,000	1,21,457	1,07,301
Charges	A.	20,500	25,354	33,186
	B.	40,500	35,802	28,697
Total		61,000	61,156	61,883
Surplus		24,000	60,301	45,418

The great difference in the receipts and surplus between the regular estimate and actuals is owing to the omission of revenue derived from Soom forests above mentioned.

The actuals of expenditure are very near the regular estimate. The excess expenditure, under "A.—Conservancy and Works," was very urgent, and incurred with the permission of the Supreme Government. This sanction of an additional Rs. 10,000 was received after the submission of the regular estimate.

The saving under "B.—Establishments," is owing to the return of one of the officers from leave much later than expected, and two other officers having gone unexpectedly on sick leave.

107. The receipts of the year under review, as compared with those of the previous year, are the following :—

Receipts, 1874-75.	Receipts, 1875-76.	Increase, 1875-76.
Rs.	Rs.	Rs.
65,949	1,07,301	41,352

The above amount, shown as receipts of 1874-75, differs from that shown in last Annual Report by Rs. 1,200, which is an adjustment effected in the Civil Account Department after the submission of the last Annual Report. The same is the case with the total of expenditure of 1874-75, in which an adjustment of Rs. 485-6-9, was made by the Civil Account Department after the submission of last year's Forest Report.

108. The expenditure during the year under notice is nearly the same as in the previous year, and shown in detail in the following table :—

Budget Heads.	1874-75.	1875-76.	Increase.	Decrease.
A.—CONSERVANCY AND WORKS.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
I. Cost of timber operations	2,444 10 0	2,092 5 9	.....	352 4 3
II. Cost of collecting minor produce ...	1,774 4 0	2,321 8 0	547 4 0	.....
III. Cost of forest organization	93 1 0	765 14 10	672 13 10	.....
IV. Cost of treatment and creation of forests	12,768 0 5	14,047 5 3	1,279 4 10	.....
V. Rent of leased forests.	50 0 0	50 0 0	.....	.....
VI. Cost of collecting duty on forest produce	.....	.....	.....	.....
VII. Works of utility for the development of forests	4,119 3 9	4,820 12 3	701 8 6	.....
XIII. Cost of departmental cattle	7,206 6 9	6,534 9 6	.....	671 13 3
IX. Cost of tools and plant	1,823 11 0	2,394 0 6	570 5 6	.....
X. Miscellaneous charges	1,055 13 10	159 15 0	.....	895 14 10
B.—ESTABLISHMENTS.				
I. Salaries	22,618 9 8	23,869 10 11	1,251 1 3	.....
II. Travelling allowance	5,390 0 11	4,000 3 6	.....	1,389 13 5
III. Contingencies	664 3 4	827 6 2	163 2 10	.....
Total ...	60,008 0 8	61,883 11 8	5,185 8 9	3,309 13 9

The increase under "II.—Collection of minor produce," as, in fact, the whole of the expenditure under this head, is a mere book-entry, since it is incurred only by the Deputy-Commissioner of the Gáro Hills on account of purchase of Rubber, which is resold immediately and a corresponding amount credited under "Receipts."

The increase under the other heads is small and unimportant, and is the natural consequence of the progress in the work. The decrease under timber expenses is accounted for by the cessation in timber works on account of limited timber sales from the Government depôts; the stock in hand at the end of the year under review being greater than at the commencement. There are no regular and certain timber-markets in the Province, and an export trade exists only in the Goálpára and Kámrúp districts in Sâl-timber. The development of a trade in other kinds of timber from the districts higher up the Brahmaputra can only be attempted very cautiously, to prevent losses on such timber operations.

The decrease in expenditure on account of cost of departmental cattle is accounted for by the loss of elephants in the previous year, and the late purchase of only two new animals.

The decrease under "X.—Miscellaneous" is explained by the refunds which had to be made in 1874-75, whilst none were made in the year under notice.

Under "B.—Establishments," the increase is due to the promotion of officers, and the decrease to the absence of officers on leave.

109. The distribution of receipts and expenditure in the different divisions is exhibited in the following table :—

Name of Division.	Receipts.	Expenditure.	Surplus.	Deficit.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
Direction	.....	12,842 2 2	.....	12,842 2 2
Gauháti Division	5,378 1 8	11,630 8 3	.....	6,252 6 7
Tezpur "	1,895 12 9	16,607 5 9	.....	14,711 9 0
Golághát "	3,137 2 0	6,166 11 9	.....	3,029 9 9
Goálpára "	502 8 0	5,161 3 0	.....	4,658 11 0
Cachar "	.....	443 8 9	.....	443 8 9
Civil Officers	96,388 7 0	9,032 4 0	87,356 3 0	.....
Total	1,07,301 15 5	61,883 11 8	87,356 3 0	41,937 15 3

This shows that the chief amount of revenue is realized by district officers, and the chief expenditure incurred by forest officers, which is, under the peculiar conditions of the forests explained above, how it ought to be. Meantime, every effort is made by the

Deputy-Conservator to increase the receipts wherever this can legitimately be done, and by insisting on the strictest economy, down to the smallest items of expenditure, and by watching it in the minutest details.

The receipts from Caoutchouc, formerly so large in this Province, are next to none at present; but, proposals regarding the control of this trade were submitted to Government by the Chief Commissioner.

SECTION VII.—GENERAL.

Accounts.

110. As already stated in last year's Annual Report, the accounts of forest officers are first submitted to the Deputy-Conservator to check and classify, and then to the Deputy-Accountant-General for audit and adjustment, copies of all cash-books being made and kept in the Direction office for ready reference.

On representations having been made, the same procedure was approved by the Chief Commissioner with reference to the forest accounts of civil officers. But, as these are not kept separate from the ordinary miscellaneous accounts of the district, it could not be done without an alteration in the system. This has been proposed, and is under the consideration of the Chief Commissioner.

Deputy-Conservator's Tour.

111. On the 13th of September, 1875, the Deputy-Conservator went first to the Gauháti division to give instructions regarding plantation and timber works, then started for Simla to attend the Forest Conference, and returned to the Gauháti division in November, and inspected the plantation works. After this, the Tezpur and Golághát divisions were inspected, measurements in the different plantations made, and all the reserves and control stations visited. The Makum plantation was also examined, and measurements made. On his return from Upper Assam, the Deputy-Conservator visited the Tezpur division a second time, and the management of the Charduar Caoutchouc plantation reserve was arranged with the Deputy-Commissioner.

After this, the Deputy-Conservator again inspected the Gauháti division, where Mr. Mein, one of the Junior Assistants, had in the meanwhile arrived from England. Then the Goálpára division, where Messrs. Fisher and D'Arcy were engaged in survey and valuation work of the Sidli forest, was visited; and the inspection of the forests in the Gáro Hills completed the Deputy-Conservator's tour on the 30th of April, 1876.

Elephants.

112. No losses occurred amongst these valuable, and, for the forester in this Province, most indispensable animals. Their number was insufficient during the year under notice, and much inconvenience and loss of time caused thereby. But the purchase of six additional animals has now been sanctioned, and the work in the department will thereby be rendered much more effective, and better health of the staff and safety of life be ensured to all; moreover, less work has to be done by each individual animal, which, undoubtedly, amongst elephants more than any other live stock, tends to prolong life.

CONTEMPLATED WORK in 1876-77.

Gauháti Division.

113. Fire-protection in the Sâl forests is here the first and all-important work, to which everything else must give way whenever circumstances require it. The valuation surveys in the Barduar reserve will be commenced early in the season, and proceeded with steadily; this will be done by the divisional officer, who should give his time chiefly to this important work, and only leave it when other and very urgent work absolutely requires his personal attention elsewhere. The clearing of artificial boundary-lines, repairing and increasing of boundary-mounds of the prescribed size, must also be steadily pushed on during the season. The cutting of creepers in the Sâl forests of the Barduar reserve will be carried out simultaneously with the valuation surveys. The collecting of Nahor-, Rubber-, and Poma-seed must be done at the proper season. Land suited for a timber-depôt at Nagorbera, near the mouth of the Kulsi River, is to be selected.

Four hundred Sâl-trees will be felled, logged, and barked, so as to be ready for dragging whenever the elephants are available for this work.

Tezpur Division.

114. All Sâl forests must be strictly protected against fire, as in former years, and the Bamuni Hill Caoutchouc plantation also. The cutting of creepers and useless trees, where they interfere with the growth of Sâl, will be carried out simultaneously with the fire-protection. All artificial boundary-lines must be cleared, and the boundary-mounds be repaired and increased, and strong posts for numbers placed in the centre of each. New nurseries for Rubber-seed and cuttings on high land will be prepared at the commencement of the season. The inspection-paths and plants in the old Rubber plantation will be cleared, the fences repaired, and vacancies, if any, be filled up. The planting of the new lines should not be commenced later than the 15th of November, and the making of cuttings not later than the 15th of December. Rubber-seed must be collected as soon as it begins to get ripe. Two more bridges will be constructed on the road leading from Dhekargoan to the Caoutchouc plantation, and a road will be prepared along the southern boundary line of the Chardua Caoutchouc plantation reserve for three-and-a-half miles. The working out of the dead wood from the Balipara Sâl forest is to be continued.

Golághát Division.

115. Two hundred trees of Ajhar and Nahor will be felled, barked, and logged, and brought in to the Golághát depôt. All the artificial boundary-lines will be cleared, the boundary-mounds repaired and increased where necessary, and a strong Nahor post for a number placed in the centre of each. The road leading to the Murphelani control-station will be repaired, and bridges constructed where indispensable. All the forest-huts at the control-stations will be repaired, and the building of a forest-house in the Golághát depôt commenced. Nahor-seed will be collected, as soon as ripe, for experimental sowing in the Nambor reserve.

Goálpára Division.

116. The survey of the boundaries of the remaining portion of the Sidli forests must be completed before anything else is attempted, and a description of these boundaries be submitted, with a view of having this forest also declared a reserve. After this, the northern boundary of the Ripu, Chirang, and Bijni reserves is to be inspected, and a special report to be submitted on the Khairbuna forest, and the Khair forests on the Kanamukro and Kakolang Rivers; the artificial boundary-lines of the other reserves must be gone over, and boundary-mounds be repaired and renewed where necessary.

Fire-protection is for the present year to be confined to the Sidli forest, where the protective measures must be carried out thoroughly. Valuation surveys will be continued, first in the Sidli forest and afterwards in the Goma forest. A substantial inspection-hut will be erected at Balatong, and another one at the Bijni reserve, and the one at Gurubassa be completed.

Cachar Division.

117. All the artificial boundary-lines of the Government forests must be cleared, and boundary-mounds erected, where necessary. The boundaries of tea-estates within or adjoining the Government forests must be gone over and reported on. The same must be done as regards all other cultivation existing within or adjoining the Government forests, and a complete record be prepared of such lands in accordance with the orders of Government. The detailed examination of the Jiri forest will be commenced after the above boundary work has been completed. A substantial hut for the use of the toll-collector and other establishments is to be built at the Sealtek toll-station. An inquiry into the felling of timber in the North Cachar Hills, and the floating on the Ballessur River, is to be made and reported on.

Civil Officers.

118. The fire-protection of the Pine forests and plantations at Shillong will be continued. The Nongklao Cinchona plantations will also be protected against fire. Plantation works will be confined to the sowing of the indigenous Pines and Oaks. The trees in the Makum Teak plantation will be examined and measured.

Services of Officers.

119. The Gauháti forest division remained in charge of the forest-ranger, Babu Chandra Bhusan Sen, from the commencement of the year, until Mr. Mein arrived from Europe, in January, 1876.

The Tezpur division was in charge of Mr. W. R. Fisher from commencement of the year until December, when he was transferred, and the division remained in charge of Forest-ranger Babu Jay Narayan Das.

The Golághát division was in charge of Mr. H. B. Condon, from the commencement of the year until January, 1876, when he had to go on sick leave.

The Goálpára division was managed by the Deputy-Conservator until Mr. Fisher received charge, in December, 1875.

The Cachar division was only started in February, 1876, on the return of Mr. Shakespear from Europe, and taken charge of by him. Mr. W. E. D'Arcy was appointed to the Tezpur division; but employed on special duty in the Goálpára division during the working season.

The Deputy-Conservator has every reason to be satisfied with the work done by the officers of the department.

Messrs. Fisher and D'Arcy have done good and important work in the survey and valuation of a portion of the Sidli forest, and would have done more, if this had not been the first year, and difficulties such as present themselves usually at starting had not delayed progress in the beginning.

Mr. Mein set to work with a will as soon as he arrived in Assam, and exerted himself to the utmost to keep the fires out of the Sâl forests in the Gauháti division.

Mr. W. Shakespear, although he only arrived in February, 1876, has, with praiseworthy energy, set to work to organize the new system in Cachar.

Mr. H. B. Condon worked well, and carried out vigorously the protection of the reserves in the Golághát division. He was obliged to go on sick leave to Europe before the end of the year.

Of the subordinates, the Deputy-Conservator has much pleasure in recording that Babu Joy Narayan Dass has fully sustained his good reputation as a hardworking and trustworthy man; and of Forest-ranger Babu Chundra Bhusan Sen, Mr. Mein very justly says that he was placed in a difficult and responsible position by the illness and departure of Mr. Aylmer, and earned credit by the way he managed the Gauháti division whilst it had to remain in his charge.

Form No. 26.

FOREST DEPARTMENT, ASSAM.

Annual Account Current for the year 1875-76.

Dr.	Rs. A. P.	Rs. A. P.	Cr.	Rs. A. P.	Rs. A. P.
To Cash Balance on the 1st April, 1875	2,469 2 9		By expenditure under A	33,186 7 1	
" revenue received in cash	99,747 9 9		" expenditure under B	28,697 4 7	
" revenue adjusted by book-transfer	7,554 5 8		" remittances to Public Treasuries	99,747 9 9	
" contribution to Funds	480 0 0		" revenue adjusted by book-transfer	7,554 5 8	
" remittances from treasuries	60,243 15 3		" advances recoverable	13,727 3 3	
" advances recoverable	13,270 9 6		By Cash Balance on the 31st March, 1876	1,428 8 3	
" remittances from the Government Mathematical Instrument Department, by book-transfer	469 3 0				
" remittances from the Indian Medical Department by book-transfer	106 8 8				
		1,84,341 6 7			1,84,341 6 7

Form No. 28.

FOREST DEPARTMENT, ASSAM.

Annual Summary of Revenue and Expenditure of the different Divisions during 1875-76.

REVENUE.

Classification.	Direction.	Gauháti.	Tezpur.	Golághát.	Goálpára.	Cachar.	Civil Officers.	TOTAL.
I.—REVENUE FROM WOOD.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
1. Brought to depôt by departmental agency— (a.)—Timber (b.)—Firewood and charcoal. (c.)—Sandal-wood.	.....	4,792 43 8	1,782 14 3	3,074 12 0	.....	.....	.....	9,609 7 11
2. Wood removed from the forests by purchasers, license-holders, and permit-holders— (a.)—Timber (b.)—Firewood and charcoal.	.....	565 4 0	.....	.....	489 0 0	.....	21,919 1 6	22,993 5 6
3. From confiscated, drift, and waif-wood	.....	.....	.....	.....	.....	.....	73 0 0	73 0 0
II.—REVENUE FROM MINOR PRODUCE.								
1. Grazing-dues and sale of grass	.....	.....	.....	.....	.....	.....	50 0 0	50 0 0
2. Other minor produce	.....	.....	.....	12 4 0	.....	.....	22,416 14 6	22,429 2 6
III.—DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.								
1. On wood	.....	.....	.....	.....	.....	.....	15,063 15 0	15,063 15 0
2. On other forest produce.								
IV.—MISCELLANEOUS.								
1. From fines and forfeitures	.....	.....	.....	.....	13 8 0	.....	6 0 0	19 8 0
2. From refunds to the Department	.....	.....	161 12 0	56 2 0	.....	.....	6 2 0	218 0 6
3. From other sources	.....	.....	1 2 0	.....	.....	.....	36,853 6 0	36,854 8 0
TOTAL RECEIPTS	.....	5,378 1 8	1,895 12 9	3,137 2 0	502 8 0	.....	96,388 7 0	1,07,301 15 5

Form No. 28.

EXPENDITURE.

Classification.	Direction.	Gauhâti.	Tezpur.	Golaghât.	Goâlpâra.	Cachar.	Civil Officers.	TOTAL.
A.—CONSERVANCY AND WORKS.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P
I.—COST OF TIMBER OPERATIONS.								
1. On wood brought to depôt by departmental agency— (a.)—Timber (b.)—Firewood and charcoal. (c.)—Sandal-wood.	.....	559 5 0	1,069 0 3	464 0 6	.....	.....	.....	2,092 5 9
2. On wood removed from the forests by purchasers, licensee-holders, and permit-holders— (a.)—Timber. (b.)—Firewood and charcoal.								
3. On confiscated, drift, and waif wood.								
II.—COST OF COLLECTING MINOR PRODUCE.								
1. Grazing and sale of grass.								
2. Other forest produce	.....	.....	.....	.....	.....	.....	2,321 8 0	2,321 8 0
III.—COST OF FOREST ORGANIZATION.								
1. Demarcation-lines and boundary-pillars or marks.	.....	8 12 0	155 9 3	84 12 0	76 4 0	.....	.....	325 5 3
2. Working plans.								
3. Surveys	13 3 6	.....	4 2 0	33 12 0	367 7 3	22 0 10	.....	440 9 7
IV.—COST OF THE TREATMENT AND CREATION OF FORESTS.								
1. Natural Forest— (a.)—Protection from fire	.....	1,002 7 3	275 1 6	.....	23 8 0	.....	122 0 0	1,423 0 9
(b.)—Fencing and enclosing.								
(c.)—Improvement and conservation	21 0 0	210 0 0	17 14 0	123 8 9	3 0 0	.....	5,053 9 0	5,428 15 9
(d.)—"Re-boisement," or restoration of denuded areas	.....	.....	156 1 3	.....	.....	.....	58 0 0	214 1 3
2. Artificial forests— (a.)—Formation	.....	1,230 11 0	2,686 11 3	.....	.....	.....	979 3 0	4,896 9 3
(b.)—Protection from fire	.....	80 15 0	17 14 0	.....	.....	.....	.....	98 13 0
(c.)—Improvement and conservation	.....	404 14 0	778 2 0	97 6 3	.....	.....	446 0 0	1,726 6 3
(d.)—Fencing and enclosing	.....	230 15 0	28 8 0	.....	.....	.....	.....	259 7 0
V.—RENT OF LEASED FORESTS	.....	.....	.....	.....	.....	.....	50 0 0	50 0 0
VI.—COST OF COLLECTING DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.								
VII.—WORKS OF UTILITY FOR THE DEVELOPMENT OF FORESTS.								
1. Roads and bridges	.....	45 6 0	933 13 6	67 12 6	.....	.....	2 0 0	1,049 0 0
2. Buildings and offices	140 0 0	387 4 0	2,426 15 3	505 2 0	289 7 0	.....	.....	3,748 12 9
3. Compensation for land taken up for forest purposes, or for extinction of forest rights.								
4. Other works	22 15 6	.....	.....	.....	.....	.....	.....	22 15 6
VIII.—COST OF DEPARTMENTAL CATTLE.								
1. Purchase of stock	.....	1,600 0 0	2,117 0 0	.....	.....	.....	.....	3,717 0 0
2. Hire of stock	.....	.....	.....	.....	.....	70 0 0	.....	70 0 0
3. Feed and keep of cattle	38 10 0	1,885 9 6	923 3 9	292 3 0	107 15 3	.....	.....	2,747 9 6
IX.—COST OF DEPARTMENTAL PLANT AND TOOLS.								
1. For timber and wood operations	19 6 0	35 15 6	316 14 0	167 14 0	.....	.....	.....	540 1 6
2. For other purposes	578 7 6	916 7 3	137 8 3	119 0 0	81 12 0	20 12 0	.....	1,853 15 0
X. MISCELLANEOUS CHARGES.								
1. Refunds	.....	.....	.....	.....	.....	.....	.....	.....
2. Law charges	.....	.....	.....	22 1 0	8 0 0	.....	.....	30 1 0
3. Other charges	26 3 0	22 10 0	48 11 0	32 6 0	.....	.....	.....	129 14 0
TOTAL OF A.—CONSERVANCY AND WORKS	859 13 6	8,121 3 6	12,093 1 9	2,009 14 0	957 5 6	112 12 10	9,032 4 0	33,186 7 1
B.—ESTABLISHMENTS.								
I.—SALARIES.								
1. Pay of Deputy-Conservator	6,000 0 0	.....	.....	.....	.....	.....	.....	6,000 0 0
2. Pay of Control and Executive Officers	.....	1,038 11 3	1,500 0 0	2,000 0 0	2,275 5 9	325 10 11	.....	7,139 11 11
3. Protective establishments	.....	1,758 8 0	2,176 0 0	988 5 3	851 0 0	.....	.....	5,773 13 3
4. Office establishments	3,307 11 9	462 1 6	263 1 0	505 9 0	90 10 6	.....	.....	4,726 1 9
5. Deputation and special allowances	230 0 0	.....	.....	.....	.....	.....	.....	230 0 0
II.—TRAVELLING ALLOWANCES.								
1. Deputy-Conservator	1,749 12 0	.....	.....	.....	.....	.....	.....	1,749 12 0
2. Control and Executive Officers	.....	214 0 0	553 0 0	593 15 6	873 13 0	.....	.....	2,234 12 6
3. Protective establishments	.....	.....	.....	.....	2 0 0	.....	.....	2 0 0
4. Office establishments	13 11 0	.....	.....	.....	.....	.....	.....	13 11 0
III.—CONTINGENCIES.								
1. Stationery	116 9 9	.....	9 4 0	1 14 0	.....	.....	.....	127 13 9
2. Office rent and carriage of tents and records	.....	.....	1 8 0	0 12 0	64 9 0	.....	.....	66 13 0
3. Pay of Police guards.								
4. Sundries	309 3 2	14 0 0	0 10 0	46 14 6	26 7 3	.....	.....	397 2 11
5. Official postage	165 5 0	15 0 0	10 13 0	19 7 6	20 0 0	5 1 0	.....	235 10 6
TOTAL OF B.—ESTABLISHMENTS	11,982 4 8	3,509 4 9	4,514 4 0	4,156 18 9	4,203 13 6	330 11 11	.....	28,697 4 7
GRAND TOTAL OF ALL EXPENDITURE	12,842 2 2	11,630 8 3	16,607 5 9	6,166 11 9	5,161 3 0	443 8 9	9,032 4 0	61,883 11 8

FORM No. 29.

FOREST DEPARTMENT, ASSAM.

Annual Statement of Outstandings and Liabilities on account of Contractors or Disbursers for 1875-76.

Detail of Division.	Department Debtor.				Department Creditor.				Balance Due.	
	At commencement of the year	Recoveries in cash, and value of supplies and work done.	Total.		At commencement of the year.	Payments made.	Total.		To Department (outstandings).	By Department (Liabilities).
		Rs. As. P.	Rs. As. P.		Rs. As. P.	Rs. As. P.	Rs. As. P.		Rs. As. P.	Rs. As. P.
Direction	....	1,218 9 0	1,218 9 0		.....	1,218 9 0	1,218 9 0		.....	.....
Gauhâti	....	958 0 0	958 0 0		5 0 0	974 0 0	979 0 0		21 0 0	.....
Tezpur	....	8,980 14 6	8,980 14 6		264 1 6	9,039 1 0	9,303 2 6		322 4 3	0 0 3
Golaghât	....	1,414 5 0	1,414 5 0		467 1 0	1,395 5 3	1,862 6 3		448 1 3	.....
Goalpára	....	682 5 0	682 5 0		.....	1,100 4 0	1,100 4 0		417 15 0	.....
Cachar	....	.....	.....		.....	.....	.....		.....	.....
Civil Officers ..	....	16 8 0	16 8 0		16 8 0	.....	16 8 0		.....	.....
Total ..	....	13,270 9 6	13,270 9 6		752 10 6	13,727 3 3	14,479 13 9		1,209 4 6	0 0 3

FORM No. 30.

FOREST DEPARTMENT, ASSAM.

Annual Account of Forest Revenue for the year 1875-76.

		Rs. As. P.			Rs. As. P.
	To Assets—			By Revenue collected—	
1st April, 1875 ..	Value of timber at the commence of year	4,629 0 0	31st March, 1876 ..	Cash and Transfers ..	1,07,301 15 5
	Ditto ditto of other stock ditto..	13,647 0 0		By Assets—	
	Dues* to Forest Department ..	2,101 14 6	Ditto	Value of timber at close of year	5,569 1 3
31st March, 1876 ..	To outlay during the year ..	61,883 11 8		Value of other stock at close of year	19,612 0 0
	Total ..	82,261 10 2		Dues* to Department. ..	1,893 15 3
Ditto ..	To profit for the year ..	52,115 5 9			
	Total ..	1,34,376 15 11		Total ..	1,34,376 15 11

* Difference between dues to, and dues by, the Department are explained in detail below, and in accordance with entries in Statements 29 and 41 :—

EXPLANATION OF DIFFERENCE BETWEEN DUES TO, AND DUES BY, THE DEPARTMENT.

Dues to Forest Department on the 1st of April, 1875

	Rs. As. P.
On account of sales.....	1,349 4 0
" " outstanding advances.....	752 10 6
Total.....	2,101 14 6

Dues to Forest Department on the 31st of March, 1876.

On account of sales.....	684 11 0
" " outstanding advances	1,209 4 6
Total.....	1,893 15 6
Deduct amount due by the Department	0 0 3
Total.....	1,893 15 3

FORM No. 39.

FOREST DEPARTMENT, ASSAM.

Statement of Timber brought to Depôts from the different Forest Divisions during 1875-76.

Name of River or Division.	Forest.	Description of Timber.	Pieces.	Cubic Feet.	Total of each River or Division.	
					Pieces.	Cubic Feet.
				ft. in.		ft. in.
Gauhâti Division	Pantan Reserve	Sâl logs	374	8,884 1	374	8,884 1
Tezpur "	Balipara "	Sâl logs (dead wood)	184	795 4	....	....
" "	Chardiuar Forest	Ajhâr planks	160	320 0	....	....
" "	" "	" scantlings	66	245 0	....	....
" "	Balipara Reserve	Poma	8	97 9	....	....
" "	" "	Sâl logs	24	539 2	....	....
" "	" "	Ajhâr logs	16	208 10	....	....
" "	" "	Sâl planks	1	2 10	....	....
" "	" "	" scantlings	3	8 4	....	....
" "	" "	Ajhâr planks	93	209 9	555	2,427 0
Golâghât "	Nambor "	Nahor	5	180 0	....	....
" "	" "	Ajhâr	66	2,354 0	....	....
" "	" "	Nahor (second class)	160	....	....	....
" "	" "	Ajhâr " "	3	....	....	....
" "	" "	Poma " "	16	....	250	2,534 0
		Total ..	....	....	1,179	13,845 1

FORM No. 40.

FOREST DEPARTMENT, ASSAM.

Annual Timber Account for 1875-76.

Description of Timber and Scantling.	Pieces.	Total.	Description of Timber and Scantlin	Pieces.	Total.
I.—Stock in hand at the commencement of the year—			I.—Removed by purchasers—		
Gauhâti Division	141		Gauhâti Division	181	
Tezpur "	43		Tezpur "	490	
Golâghât "	46	230	Golâghât "	226	897
			II.—Used by the Department—		
			Gauhâti Division	3	
			Tezpur "	71	
II.—Received during the year—			Golâghât "	28	102
			III.—Balance in hand at the close of the year—		
Gauhâti Division	374		Gauhâti Division	331	
Tezpur "	555		Tezpur "	37	
Golâghât "	250	1,179	Golâghât "	42	410
Total	....	1,409	Total	....	1,409

FORM No. 41.

FOREST DEPARTMENT, ASSAM.

Statement showing the amount realized on Account of the different classes of Timber sold during the year 1875-76.

Divisions and descriptions of Timber.		Number of logs and pieces.	Average cubical contents per log.		Amount realized and due on account of timber sold.			Average amount per log.			Average amount per 100 cubic feet.		
			ft.	in.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.
GAUHÂTI DIVISION	Sâl logs	181	30	11	4,792	13	8	26	7	8	85	7	1
	Sâl posts	10	28	3	247	12	3	24	12	5	87	7	11
	" (dead wood)	204	4	0	644	10	0	3	2	6	77	9	6
	" planks	1	2	10	4	4	0	4	4	0	150	0	0
TEZPUR "	" scantlings	3	4	2	14	15	0	4	15	8	119	8	0
	Uriam logs	12	5	8	17	2	0	1	6	10	25	0	0
	Ajhâr planks	228	2	1	594	11	0	2	9	8	123	15	3
	" scantlings	32	0	11	48	7	0	1	8	2	156	4	0
	Nahor logs	5	36	0	147	8	0	29	8	0	81	15	1
	Ajhâr logs	65	36	6	1,779	12	0	27	6	1	75	0	0
GOLÂGHÂT "	Jamu logs	1	23	0	6	0	0	6	0	0	26	1	4
	2nd class Nahor	152	.....		620	0	0	4	1	3	.....		
	" Ajhâr	3	.....		18	0	0	6	0	0	.....		
	TOTAL	897	11	0	8,935	14	11	9	15	4	99	5	1

Deduct amount due, but not realized during the year	684	11	0
Balance	8,251	3	11
Add amount realized on account of former years	1,349	4	0
Add amount collected by District Officers	.....		
Total shown as Revenue on account of timber sales	9,600	7	11

FORM No. 42.

FOREST DEPARTMENT, ASSAM.

Statement showing the Amount expended on account of Timber received from Divisions during 1875-76.

1	2	3		4	5	6	7		8	9
Divisions.	Number of logs and pieces.	Cubical contents.		Timber expenses.	Conservancy expenses, cost of establishment, &c., of the department, excluding Direction.	Total amount expended, including Direction.	Average cubical contents per log or piece.		Average amount paid per 100 cubic feet.	REMARKS.
		ft.	in.	Rs. As. P.	Rs. As. P.	Rs. As. P.	ft.	in.	Rs. As. P.	
Gauhâti Division ..	374	8,884	1	359 5 0	11,071 3 3	14,198 15 1	23	9	159 13 2	The figures in column 5 represent the total expenditure of the respective divisions, excluding timber expenses and direction.
Tezpur " ..	555	2,427	0	1,069 0 3	15,538 5 6	19,175 12 7	4	4	790 1 7	The figures in column 6 include timber expenses as well as one-fifth of direction for each division.
Golâghât " ..	250	2,534	0	464 0 6	5,702 11 3	8,735 2 7	10	1	344 11 5	The figures in column 8 are the average cost of 100 cubic feet, including the total expenditure of one division with one-fifth of direction added.
Total....	1,179	13,845	1	2,092 5 9	32,312 4 0	42,109 14 3	11	8	304 2 4	

FOREST DEPARTMENT, ASSAM.

Area of Reserved Forests in 1875-76.

Reserved Forests.		Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.
	RESERVES UNDER THE FOREST DEPARTMENT.	Square miles.	Square miles.	Square miles.	Square miles.
	Kámrúp District.				
GAUHÁTI DIVISION	Barduar Sál forest	22·25	1·5	.....	23·75
	Pantan ditto	12	.....	.....	12
	Matiakhar ditto	3·5	.....	.....	3·5
	Kulsi plantation ditto	5·5	.....	.....	5·5
	Jara ditto	1·6	.....	.....	1·6
	Milmillia ditto	2·1	.....	.....	2·1
	Nowgong District.				
	Kholahat Sál forest	3	.....	.....	·3
	Deboka ditto	0·81	.....	.....	0·81
	Darrang District.				
TEZPUR DIVISION	Balipara forest	87·84	.....	.....	87·84
	Khalingduar forest	9·75	.....	.....	9·75
	Charduar Rubber plantation	.....	33·54	.....	33·54
	Bhamaraguri Hill	.....	0·6	.....	0·6
	Garumari	.....	0·32	.....	0·32
	Nága Hills District.				
GOLÁGHAT DIVISION	Nambor forest	389·56	.....	.....	389·56
	Mikir Hill forest	65	.....	.....	65
	Godlpára District.				
GOÁLPÁRA DIVISION	Bijniduar forest	.....	12·56	.....	12·56
	Chirangduar, No. 1 forest	.....	108·13	.....	108·13
	Ditto, " 2 forest	.....	137·63	.....	137·63
	Ripuduar forest	.....	65	.....	65
	Gomaduar "	.....	24·65	.....	24·65
	RESERVES UNDER CIVIL OFFICERS.				
	Darrang District.				
	Charduar Rubber plantation	.....	46·46	.....	46·46
	Total	602·91	430·39	.....	1,033·30

FOREST DEPARTMENT, ASSAM.

Area of Unreserved Forest in 1875-76.

Unreserved Forests.		Area in 1874-75.	Added during the year.	Declared reserves during the year.	Total remaining in 1875-76.	REMARKS.
	Godlpára District.	Sqr. miles.	Sqr. miles.	Sqr. miles.	Sqr. miles.	
GOÁLPÁRA DIVISION	Bijniduar	12·56	.....	12·56	.....	
	Sidliduar	74·37	.....	.....	74·37	Gazetted as open forest.
	Chirangduar	245·76	.....	245·76	.....	
	Ripuduar	65	.....	65	.....	
	Gomaduar	24·65	.....	24·65	.....	
	Cachar District.					
CACHAR DIVISION	Within the Inner Line	336	.....	.....	336	Proposed as reserves.
	Beyond "	489	.....	.....	489	
	Sylhet District	273	.....	.....	273	
	Within Revenue Limits.					
CIVIL OFFICERS	Goálpára	8	.....	.....	8	Undefined forests, protected by the Deputy-Commissioners and the Political Agent, Nága Hills.
	Kámrúp	83	.....	1·5	81·5	
	Darrang	400	.....	80·92	319·08	
	Nowgong	52	.....	.....	52	
	Sibsagar	335	.....	.....	335	
	Lakhimpur	2,500	.....	.....	2,500	
	Sylhet	27	.....	.....	27	
	Cachar	4	.....	.....	4	
	Beyond Revenue Limits.					
	Khási and Jaintiá Hills	150	.....	.....	150	
	Nága Hills	525	.....	.....	525	
	Lakhimpur	1,500	.....	.....	1,500	
	Cachar	11	.....	.....	11	
	Garo Hills	.....	350	.....	350	
	Total	7,115·34	350	430·39	7,034·95	

FOREST DEPARTMENT, ASSAM.

Area of Plantations for the year 1875-76.

Name of Plantation.	Area in 1874-75.	Total cost.	Area added during 1875-76.	Amount expended during 1875-76.	Total area up to 1875-76.	Total expenditure incurred up to 1875-76.	REMARKS.
Gauhátí Division.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	
Kulsi plantation—							
Caoutchouc..	35	983 11 0	30	512 8 9	65	1,496 3 9	
Teak	53	4,041 15 11	20	1,360 12 6	73	5,402 12 5	
Sisu	20	789 7 5	....	74 1 9	20	863 9 2	
Tezpur Division.							
Chardúar Plantation—							
Caoutchouc..	180	3,762 8 0	140	3,293 5 3	320	7,055 13 3	
Banuni Hill Plantation—							
Caoutchouc..	10	549 11 3	....	217 14 0	10	767 9 3	
Goálpárá Division.							
Makoom plantation—							
Teak	4	1,128 7 6	....	97 6 3	4	1,225 13 9	
Civil Officers.							
Shillong timber plantation ..	4½	400 0 3	4	342 9 6	8½	742 9 9	
Nungklao cinchona plantation	1¾	320 0 0	....	352 0 0	1¾	672 0 0	
Total ..	308 1/16	11,975 13 4	194	*6,250 10 0	502 1/16	18,226 7 4	

* The difference of Rs. 730-9-6, between this figure and the amount shown under "A. IV. 2., Plantations," in the summary of expenditure, Rs. 6,981-3-6 is the cost of sowing and planting on separate pieces of land, carried out chiefly with a view of securing a water-supply for the station of Shillong, in the Khási Hills.

FOREST DEPARTMENT, ASSAM.

Area of Forest Tracts protected from Fire during 1875-76.

Forests.		Area of forest.	Total expenditure previous to 1875-76.	Area burned in 1875-76.	Area not burned in 1875-76.	Expenditure during the year 1875-76.	Total expenditure incurred up to end of the year 1875-76.
	Kámrúp District.	Acres.	Rs. As. P.	Acres.	Acres.	Rs. As. P.	Rs. As. P.
GAUHÁTI DIVISION	Bardúar reserve	15,200	445 6 0	.....	15,200	353 1 6	798 7 6
	Pantan "	7,680	265 1 0	80	7,600	182 13 3	447 14 3
	Matlakhar "	2,240	89 4 0	.....	2,240	167 10 9	256 14 9
	Kulsi plantation reserve	3,520	114 0 0	2,000	1,520	122 15 9	236 15 9
	Jara reserve	1,040	78 4 0	.....	1,040	79 12 0	158 0 0
	Milmillia reserve	1,400	75 0 0	1,380	20	89 2 0	164 2 0
	Nowgong District.						
	Kholahat reserve	1,920	104 9 0	12	1,908	.....	104 9 0
	Deboka "	520	.....	.....	520	7 0 0	7 0 0
	Darrang District.						
TEZPUR DIVISION	Balipara reserve	581½	33 14 0	5	576½	219 13 0	253 11 0
	Garumari "	50	14 0 0	.....	50	55 4 6	69 4 6
	Godlpára District.						
GOÁLPÁRA DIVISION	Sidli forests	15,716	.....	14,716	1,000	23 8 0	23 8 0
	Khási and Jaintiá Hills.						
CIVIL OFFICERS	Shillong forests	3,618	76 5 0	18	3,600	122 0 0	198 5 0
	Total	53,485½	1,295 11 0	18,211	35,274½	1,423 0 9	2,718 11 9

FOREST DEPARTMENT, ASSAM.

Prosecutions for Breaches of Forest Rules during the year 1875-76.

DIVISIONS.	NUMBER OF PROSECUTIONS.		CONVICTIONS OBTAINED OR STILL PENDING.			
			Number of cases.		Number of persons	
	Number of cases.	Number of persons.	Convictions.	Pending.	Convicted.	Under trial.
Gauhátí Division	1	1	1	.....	1	.....
Goálpárá "	3	7	3	.....	7	.....
Goálpara "	3	13	3	.....	13	.....
Civil Officers (Shillong open forests)	10	25	8	.....	23	.....
Total	17	46	15	.....	44	.....

GUSTAV MANN,

Deputy-Conservator of Forests, Assam.

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APPENDIX I.

Additions to the List of useful Trees growing in the Province of Assam.

Current Number.	Botanical Name.	Native Name.	Size of tree when full grown, in feet.	REMARKS.
1	Amoora spectabilis	Amari (true)	8 to 12 feet	Darrang district, lower hill forests. Wood, dark red; takes a good polish; durable; used for boat-building and furniture.
2	Dysoxylum Hamiltonii	Gendelli Poma	12 to 15 „	Darrang district, lower hill forests. Wood, red; used for boats and planks; not very durable.
3	Beilschmiedia Roxburghiana	Serai Guti	6 to 8 „	Darrang district, lower hill forests. Wood durable; used for boats' building, and other purposes.
4	Garcinia xanthochymus	Tepur	3 to 4 „	All the districts of Assam, lower hill forests. Wood used for buildings and other domestic purposes; bark used for dyeing yellow; fruit eaten.
5	Albizzia procera	Karoi	4 to 6 „	Upper and Central Assam. Wood, blackish; durable; used for building and other domestic purposes.
6	Albizzia stipulata	Sow	6 to 8 „	Upper Assam, mixed plains forests. Wood red, light and durable; used for boats, planks, furniture, and other domestic purposes.
7	Securinega obovata	?	2 to 3 „	Goálpára district, mixed plains forests. Wood durable; used for ordinary domestic purposes.
8	Cinnamomum cecidodaphne	Buddai Soom	3 to 4 „	Central Assam, lower hill forests. Wood soft and inferior. Moogah silkworm will eat the leaves, if nothing better can be had.
9	Pithecolobium biguminum	?	3 to 4 „	Lower Assam, lower hill forests. Wood durable; dark; used for ordinary domestic purposes.
10	Vitex canescens	?	4 to 6 „	Kámrúp district, lower hill forests. Wood used for building and other purposes.
11	Phœbe glaucescens	?	3 to 4 „	Central Assam, lower hill forests. Wood soft and inferior.
12	Manglietia insignis	?	8 to 10 „	Khási Hills, upper hill forests, 6,000 feet. Wood used for ordinary purposes.
13	Cinnamomum paucifloruum	?	4 to 6 „	Khási Hills, upper hill forests, 4,000 feet; wood used for ordinary purposes.
14	Olea dioica	?	4 to 6 feet.	Lower Assam, lower hill forests. Wood good; used for building and other purposes.
15	Heynea trijuga	?	3 to 4 „	Goálpára district, lower hill forests. Wood used for ordinary domestic purposes.
16	Walsura robusta	?	6 to 8 „	Kámrúp district, lower hill forests. Wood used for ordinary domestic purposes.
17	Gynocardia odorata	?	3 to 4 „	Goálpára district, lower hill forests. Oil extracted from the seed. Wood used for ordinary domestic purposes.
18	Echinocarpus Assamicus	Jabba Hingori	4 to 6 „	Central Assam, lower hill forests. Wood soft; used for planks and other domestic purposes.
19	Phœbe sp.	Marili	4 to 6 „	Goálpára district, lower hill forests. Wood used for boats, but is inferior.
20	Excœcaria baccata	?	4 to 6 „	Kámrúp district, lower hill forests. Wood soft and inferior.
21	Cinnamomum Tamala	Dopatti	4 to 6 „	Goálpára district, lower hill forests. Wood inferior.
22	Zanthoxylum Rhetsa	Borjonally	6 to 8 „	Kámrúp district, lower hill forests. Wood soft and inferior.
23	Phœbe lanceolata	?	4 to 6 „	Kámrúp district, lower hill forests. Wood inferior.
24	Eugenia macrocarpa	?	4 to 6 „	Goálpára district, lower hill forests. Short in the bole. Wood inferior. Tree very ornamental.
25	Crataeva lophosperma	?	2 to 3 „	Goálpára district, mixed plains forests. Wood inferior.
26	Pithecolobium angulatum	?	3 to 4 „	Central Assam, lower hill forests. Wood inferior.
27	Elæocarpus Varunua	Tuttcaly (Darrang) / Saul kuri (Goálpára)	4 to 6 „	Darrang and Goálpára districts, lower hill forests. Wood soft and inferior.
28	Albizzia lucida	Mess-guch	4 to 6 „	Kámrúp district, lower hill forests, one of the trees on which the lac insect is reared. Wood inferior.
29	Dalbergia stipulacea	?	3 to 4 „	Goálpára district, lower hill forests. Wood inferior.
30	Chisocheton paniculatus	?	3 to 4 „	Lower Assam lower hill forests. Wood inferior; used for ordinary domestic purposes.
31	Buchanania grandis	?	6 to 8 „	Central Assam, lower hill forests. Wood soft and inferior.
32	Ilex Godajam	Tirsau	4 to 6 „	Goálpára district, lower hill forests. Wood used for ordinary purposes.
33	Croton oblongifolius	Burma	3 to 4 „	Goálpára district, lower hill forests. Wood used for ordinary purposes.
34	Mallotus philippinensis	Puddum	2 to 3 „	Goálpára and Darrang districts, mixed plain forests. Wood inferior; red colour from fruit used for dyeing.
35	Æsculus Assamica	Kunkir-kola	3 to 4 „	Goálpára district, lower hill forests and river banks. Wood inferior.

Current number.	Botanical Name.	Native Name.	Size of tree full grown, in feet.	REMARKS.
36	Melicosma simplicifolia	Dibru	3 to 4 feet.	Goálpára district, lower hill forests near watercourses. Wood inferior.
37	Baccaurea sapida	Lateoku	2 to 3 „	The bark is commonly used for dyeing black. Fruit eaten. Wood inferior.
38	Premna mucronata		3 to 4 „	Lower Assam, mixed plains and lower hill forests. Wood used for ordinary domestic purposes.
39	Macaranga pudica	Modala	2 to 3 „	Goálpára district, mixed plains forests. Only fit for firewood.
40	Diospyros variegatus	?	4 to 6 „	Kámrúp district lower hill forests. Wood used for ordinary purposes.
41	Spondias mangifera	?	2 to 3 „	Goálpára district, mixed plains forests. Wood inferior, fit for nothing but firewood.

APPENDIX II.

REGISTER OF RESERVED FORESTS IN THE PROVINCE OF ASSAM, ADDED DURING 1875-76.

GAUHATI FOREST DIVISION.

KÁMRÚP DISTRICT.

VIII. THE SECOND ADDITION TO THE BARDUAR RESERVE.—Notified in the *Assam Gazette* of the 10th April, 1875, page 206, situated immediately east of the Barduar reserve, and adjoining it.

(1.) *Area.*—1·5 square miles, or 960 acres.

(2.) *Boundaries.—North.*—The cultivated lands of the village of Barosala.

East.—The foot of the Ghagorachok Hill from the cultivated lands of Barosala to the Mureea Nadi; thence up the latter stream to a point nearest to the Barduar forest reserve.

South and West.—A straight line running east and west from the Mureea Nadi to the Barduar forest reserve, and the eastern boundary of the latter.

(3.) *Soil.*—About half of it is a hill of granitic formation, with sandy loam of sufficient depth on the surface to produce superior growth of trees. The other half is level land, also chiefly sandy loam, with vegetable mould on the surface.

(4.) *Description of forest.*—Like the rest of the Barduar reserve, the trees are chiefly Sâl, with lower hill forests occupying the banks of the rivulets on the hilly portion. On the level land it is either exclusively Sâl, or, especially at the southern extremity, grass only, which was included partly to secure a natural boundary and partly for extension of Sâl, which spreads naturally if the fire is kept out.

(5.) *Timber-depôt.*—At Kukurmara, on the Kulsi River, at the crossing of the Assam Trunk Road.

(6.) *Timber-markets.*—The towns of Gauháti and Goálpára can be supplied; beyond the Province, Serajganj and Dacca, from where timber-traders come as far as Kukurmara to buy timber.

(7.) *Lines of export.*—The Bata, Kulsi, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of four inches to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Gauháti Forest Division.

(11.) *Working plan.*—The detailed examination of this reserve for the preparation of a preliminary working plan will be carried out simultaneously with the rest of the Barduar reserve.

TEZPUR FOREST DIVISION.

DARRANG DISTRICT.

III. THE BHAMARAGURI HILL RESERVE.—Notified in the *Assam Gazette* of 31st July, 1875, 402, situated on the north bank of the Brahmaputra River, and four miles above, or east ›zpur :—

(1.) *Area.*—0·6 square miles, or 386 acres.

(2.) *Boundaries.—North and West.*—Base of the Bhamaraguri Hill.

South.—The River Brahmaputra.

East.—A suti of the Bhairabi River.

(3.) *Soil.*—Loam resting on granitic rock.

(4.) *Description of forest.*—Inferior lower hill forest, and mixed plains forest. Part of it has been under tea-cultivation, which was discontinued, and the forest growth on this portion is comparatively young.

(5.) *Timber-depôt.*—The trees growing are cut for firewood only, which is stacked at Tezpur for the use of the Government steamers.

(6.) *Timber-markets.*—None of the wood is sold, but reserved exclusively for the use of Government steamers.

(7.) *Lines of export.*—The Brahmaputra River.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map of the reserve of four inches to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the Office of the Tezpur Forest Division.

(11.) *Working plan.*—This forest was re-purchased by Government from its owner more with a view of securing the site than for the sake of the forest on it, but as it so happens

that a certain amount of firewood is required by the Government steamers, and this reserve being only four miles from one of the places (Tezpur) where steamers can conveniently stop to take in firewood, the forest growth in this reserve is protected by not allowing it to be cut for any other purpose than firewood, and conserved by only allowing trees of and above 3 feet in girth, measured 4 feet above the ground, to be felled. No improvement of this forest is intended, since the soil is inferior, and large areas of better forest (Charduar and Nowduar) have been made reserves, on which any funds granted for the improvement of forests in the Darrang district will be spent more advantageously.

IV. THE GARUMARI SAL FOREST.—Notified in the *Assam Gazette* of the 11th December, 1875, page 648, situated about seven miles north of Tezpur, and one mile east of the Balipara road.

(1.) *Area.*—0·32 square miles, or 205 acres.

(2.) *Boundaries.*—*North.*—The southern boundary of a grant of waste land, No. 2, belonging at present to the Agra Bank.

East.—A survey line running in a south-easterly direction from the south-east corner of grant No. 2, to the junction of a small stream with the Mara Bhairabi River.

South.—The Mara Bhairabi River, and a survey line running from the latter due west, and measuring 1,255 feet in length.

West.—A survey line running due north from the south-western corner of the reserve to the southern boundary of grant No. 2, and measuring 8,701 feet in length.

(3.) *Soil.*—Alluvial, chiefly sand, with vegetable mould on the surface.

(4.) *Description of the forest.*—Almost pure Sâl on 50 acres, the remainder, or 155 acres, is grass-land. All trees are young, since this forest was resorted to for the cutting of firewood until two or three years ago, when this practice was stopped. The growth of the trees is healthy and vigorous, considering the forest was burnt annually until 1874-75. Seedlings are plentiful all through the forest, and there is no doubt that it will spread naturally if the fire is kept out.

(5.) *Timber-depôt.*—At Tezpur, on the Brahmaputra River.

(6.) *Timber-markets*—The towns of Tezpur and Gauháti.

(7.) *Lines of export.*—The Mara Bhairabi and the Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of eight inches to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Tezpur forest division.

(11.) *Working plan.*—The Garumari Sâl forest will be included in the working plan of the Balipara Sâl forest. Both the forest, as well as the grass land, are to be strictly protected against fire, and all creepers and useless trees, where the latter interfere with the growth of Sâl, are to be cut once a year.

V. THE CHARDUAR RUBBER PLANTATION RESERVE (EAST OF THE DIPOTA RIVER.)—Notified in the *Assam Gazette* of the 29th January, 1876, page 91, situated between the Dipota and Mansiri Rivers, immediately at the foot of the Aka Hills, and about eighteen miles north of Tezpur.

(1.) *Area.*—33·54 square miles, or 21,465 acres.

(2.) *Boundaries.*—*North.*—The line fixed by the British Boundary Commissioners between Bhutan and Aka Hills and British territory, from the Dipota River, on the west to Mansiri River, on the east.

East.—The Mansiri River, from the point where it enters British Territory to a point marked A, situated about a mile (more or less) from the confluence of the Kher Kola Koli with the Mansiri.

South.—A straight line running due west from the point marked A, on the Mansiri River, through the southern side of the Moran Pukri, to a point marked B, on the Dipota River.

West.—The Dipota River, from the point B upwards to the point where it enters British territory.

(3.) *Soil.*—The soil is almost entirely alluvial, with rich and deep vegetable mould on the surface. The high land in the southern portion consists of a rich loam.

(4.) *Description of the forest.*—A very dense lower hill forest, with the Caoutchouc tree (*Ficus elastica*) very frequent in it.

(5.) *Timber-depôt.*—The reserve has been selected chiefly with a view of planting Caoutchouc trees, but any timber felled in this forest, and worked out, is brought to the Bhairabi ghat or the Tezpur timber-depôt.

(6.) *Timber-markets.*—The Darrang district generally, and the towns of Tezpur and Gauháti; also, it is hoped, hereafter, beyond the Province, of Serajganj and Dacca.

(7.) *Lines of export.*—The Dipota, Mansiri, Bhairabi and Brahmaputra Rivers:

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one inch to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Tezpur Forest Division.

(11.) *Working plan.*—The Charduar Caoutchouc plantation started in the eastern portion of this reserve is to be extended annually by 200 to 300 acres. This is done by cutting lines, forty feet in width and 100 feet apart, through the forest from east to west, and planting these lines with Caoutchouc trees. Any of the better kinds of trees felled on these lines are worked out and brought into depôt, wherever this can be done sufficiently cheap to make such works remunerative. There is no danger from fire, and all this forest requires in the way of protection is the watching of the people to prevent them starting jhooms in it.

GOALPARA FOREST DIVISION.

Goálpára District.

I. The Bijni Duar Reserve.—Notified in the *Assam Gazette* of the 20th November, 1875, page 606, situated immediately at the foot of the Bhutan Hills.

(1.) *Area.*—12·56 square miles or 8,039 acres.

(2.) *Boundaries.*—*North.*—Bhutan frontier.

South.—The boundary of Khairbana mouzah.

East.—The boundary of Khairbana mouzah.

West.—The Kukolung Nadi.

(3.) *Soil.*—The soil consists chiefly of sand, mixed with vegetable mould, especially on the surface, and sometimes with loam or clay, and is the deposit of decomposed rock and earth washed out of the Himalayas.

(4.) *Description of the forest.*—Chiefly Khair, mixed here and there with other trees, such as compose the mixed plains forests.

(5.) *Timber-depôt.*—None at present.

(6.) *Timber-markets.*—Bilasupara and Bogribari, and, beyond the Province, Serajganj and Dacca.

(7.) *Lines of export.*—The Kukolong, Manas, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one inch to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Goálpára Forest Division.

(11.) *Working plan.*—The detailed examination, survey, and mapping, on a scale of four inches to one mile, of this reserve will be carried out after this work has been completed in the Sâl forests comprised within the Goálpára Forest Division. Until that time simple protection against illegal felling and fire, when the forest establishments in this division have been increased.

II. The Chirang Duar Reserve.—Notified in the *Assam Gazette* of the 20th November, 1875, page 606, situated immediately at the foot of the Bhutan Hills, and between the Bara Bhur Nadi in the east, and the Polo and Gangea Nadies in the west.

First, or Eastern Part.

(1.) *Area.*—108·13 square miles, or 69,205 acres.

(2.) *Boundaries.*—*North.*—The Bhutan frontier.

South.—Boundary Sidli Duar.

East.—By the Bara Bhur Nadi for some distance, then along the southern boundary of Bhumigaon Jhar mouzah in a westerly direction, and then along the Champamati River.

West.—The Sowmaka Nadi and the western boundary of Lymati Jhar mouzah.

(3.) *Soil.*—Alluvial deposits, rich vegetable mould on the surface, in those parts where the lower hill forests exist.

(4.) *Description of the forest.*—The greater portion, especially towards the north and the foot of the hills, consists of lower hill forest; further away from the hills it is mixed plains forest; and in the south and west considerable areas are covered with Sâl, but only very few trees about five feet in girth remain.

(5.) *Timber-depôts.*—Tilukgaon, on the Champamati River, and Kukrajhar, on the Gourang River.

(6.) *Timber-markets.*—Tilukgaon, Kukrajhar; Bilasupara; and Bogribari; beyond the Province, Serajganj and Dacca.

(7.) *Lines of export.*—The Champamati, Gourang, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one inch to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Goálpára Forest Division.

(11.) *Working plan.*—The detailed examination of the Sâl forests will be taken in hand after this work has been completed in the Goma reserve. Until then, the felling of Sâl is restricted to trees measuring five feet and more in girth four feet from the ground. The remainder of the forests will receive simple protection against illegal felling of timber, and cultivation being started in them. Fellings of those kinds of trees for which there is a demand will be restricted to trees of and above four feet in girth, measured four feet from the ground.

SECOND, OR WESTERN PART.

(1.) *Area.*—137·63 square miles, or 88,088 acres.

(2.) *Boundaries.*—*North.*—The Bhutan frontier.

South.—The southern boundary of Jonagaon mouzah ; then along the Hail Nadi in a northerly direction, along the southern boundary of Singmai Janee mouzah down the Saralbhanga River for a short distance, and through Gobdagaon Aphal mouzah, as demarcated by the Revenue Survey.

East.—The Sowmaka Nadi and west boundary of Lymati Jhar mouzah, which is also the eastern boundary of Kochu Bari Jhár, Totpara mouzah.

West.—The Polo and Gangea Nadies and the western boundary of Janagaon Salbari mouzah.

(3.) *Soil.*—Alluvial deposits, chiefly sand, in some parts sandy loam; richest towards the hills, poorest in the Sâl forest,—in the latter there is generally a subsoil consisting of gravel. The soil on the banks of the Hail Nadi, where the Khair and Sisu forests exist, is little else but sand, shingle, and gravel.

(4.) *Description of the forest.*—About half of it is Sâl, the remainder chiefly lower hill and mixed plains forest. On the banks of the Hail and Saralbhanga Rivers, small areas of Khair and Sisu forest exist.

(5.) *Timber-depôts.*—Are being selected at present.

(6.) *Timber-markets.*—Kukra Jhar, Bilasupara, and Bogribari ; beyond the Province, Serajganj and Dacca.

(7.) *Lines of export.*—The Saralbhanga, Hail, Gangea, Gorapala, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one mile to one inch is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Goálpára Forest Division.

(11.) *Working plan.*—The detailed examination, survey, and mapping of the Sâl forests will be carried out at the same time, this is done in the Sâl forests existing in the first or eastern part of the Chirang Duar reserve, and after this work has been completed in the Goma reserve. Meanwhile the felling of Sâl-trees will be restricted to trees of five feet and more in girth, measured four feet above the ground; and fire-protection be commenced in the Sâl, Sisu, and Khair forests, after the present permanent establishment is increased. The felling of all other kinds but Sâl will be restricted to trees measuring four feet and more in girth, four feet above the ground.

III. THE RIPU DUAR RESERVE.—Notified in the *Assam Gazette* of the 20th November, 1875, page 606, situated immediately at the foot of the Bhutan Hills and west of the Cherang reserve, which it adjoins.

(1.) *Area.*—Sixty-five square miles, or 41,635 acres.

(2.) *Boundaries.*—*North.*—By the Bhutan frontier.

South.—By the main road ; then down the Jakati Nadi, to the southern boundary of Notogaon Jhar mouzah ; along that boundary to the Pekua Nadi, up that stream to the point where it meets the Kochugaon Jhar mouzah boundary ; and along that boundary to the Gungea River.

East.—The Polo and Gungea Nadies and the western boundary of Janagaon, Salbari mouzah, which is also the eastern boundary of Kochugaon Jhar.

West.—The Ranga, or Jakati Nadi.

(3.) *Soil.*—Alluvial deposits, chiefly sand, mixed with vegetable mould, and in some parts with loam or clay.

(4.) *Description of forest.*—About one-fourth is Sâl forest, but all trees above five feet in girth have been worked out. The Sâl exists mainly in the southern part of the reserve, is healthy and vigorous, and not much intermixed with other kinds. The remainder of the reserve consists of mixed plains and lower hill forests, and a small portion in the southern extremity is grass-land.

(5.) *Timber-depôt.*—Is being selected now.

(6.) *Timber-markets.*—Bogribari ; beyond the Province, Serajganj and Dacca.

(7.) *Lines of export.*—The Pekua, Gangea, Garopala, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one inch to one mile is filed in the office of the Deputy-Conservator of Forests, Assam, and in the office of the Goálpára Forest Division.

(11.) *Working plan.*—The detailed examination survey and mapping of the Sâl forests in this reserve will be commenced after this work has been completed in the Cherang Duar reserve. The felling of Sâl will be entirely prohibited, since no mature trees remain in the forest. Fire-protection will here also have to be deferred until the permanent establishment in this division is strengthened. The felling of other kinds will be restricted to trees of four feet and more in girth, measured four feet from the ground.

IV. THE GUMA DUAR RESERVE.—Notified in the *Assam Gazette* of the 20th November, 1875, page 606, situated near the western limit of the Goálpára district, and about twenty-two miles north of Dhubri.

(1.) *Area.*—24·65 square miles, or 15,779 acres.

(2.) *Boundaries.*—*North.*—By high land, as demarcated by the Revenue Survey.

South.—Murshong Jhora and pergunnah Parbat Joar.

East.—The Tepkai Jhora and pergunnah of Parbat Joar.

West.—The Bownye Nadi.

(3.) *Soil.*—Loam mixed with decomposed quartz, and other stone resting on a sub-soil of gravel and boulders; vegetable mould covers the surface. Nearly the whole of the reserve consists of a plateau raised about thirty feet above the general level of the low land of the district.

(4.) *Description of the forest.*—These forests are exclusively Sâl, of very fair growth, and in some parts even very vigorous, but all mature trees were removed long since. Seedlings are plentiful, and nothing more is required to get the whole area completely stocked with Sâl than to keep the fires out. Creepers prevail in some parts, but are not excessive, and can easily be got under. Although no large-sized trees remain, the forest is very much the better for the protection it has received since 1868.

(5.) *Timber-depôts.*—These are being selected.

(6.) *Timber-markets.*—Suriamukh, Bogribari; beyond the Province, Serajganj and Dacca.

(7.) *Lines of export.*—Bownye, Gadadhar, Tapkai, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one mile to one inch is filed in the office of the Deputy-Conservator of Forests, Assam, and one in the office of the Goálpára Forest Division.

(11.) *Working plan.*—The survey, valuation, and mapping, on a scale of four inches to one mile, will be taken in hand as soon as this work in the Sidli forest is completed. Fire-protection will be commenced in 1877-78. All felling of Sâl is prohibited, but all dead wood is to be worked out at once. The cutting of creepers and useless trees, where the latter interfere with the growth of Sâl, is to be done every year.

RESERVES UNDER CIVIL OFFICERS.

DARRANG DISTRICT.

I. THE CHARDUAR RUBBER PLANTATION RESERVE (EAST OF THE DIPOTA RIVER).—Notified in the *Assam Gazette* of the 29th January, 1876, page 91, situated between the Belsiri and the Dipota Rivers, immediately at the foot of the Aka Hills, and about eighteen miles north of Tezpur.

(1.) *Area.*—46·46 square miles, or 29,735 acres.

(2.) *Boundaries.*—*North.*—The line fixed by the British Boundary Commissioners between Bhutan and Aka Hills and British territory, from the Belsiri River, on the west, to the Dipota River, on the east.

East.—The Dipota River, from the point where it enters British territory to a point marked C.

South.—A straight line running due west from the point marked C, on the Dipota River, to a point marked D, on the Belsiri River.

West.—The Belsiri River, from the point marked D, upwards to the point where it enters British territory.

(3.) *Soil.*—Alluvial, with rich and deep vegetable mould on the surface.

(4.) *Description of the forest.*—Very dense lower hill forest, with the Caoutchouc-tree (*Ficus elastica*) very frequent in it.

(5.) *Timber-depôt.*—This reserve has been selected chiefly with a view of planting Caoutchouc-trees, and no timber operations will be carried on in it for the present.

(6.) *Timber-markets.*—Any timber which may hereafter be worked out of this forest can be sold either in the Province, or be exported to the timber-markets in Bengal, such as Serajganj and Dacca.

(7.) *Lines of export.*—The Dipota, Belsiri, and Brahmaputra Rivers.

(8.) *List of villages or private lands remaining within the forest boundaries.*—None.

(9.) *Rights of surrounding population.*—None.

(10.) *Maps.*—A map on the scale of one inch to one mile is filed in the office of the Chief Commissioner, and another in the office of the Deputy-Conservator of Forests, Assam.

(11.) *Working plan.*—The Charduar Caoutchouc plantation, started in that portion of this reserve situated east of the Dipota River, will be extended in this forest after all the land east of the Dipota has been planted out.

APPENDIX III.

Statement showing the results of Forest Valuation Surveys in the Sidli Forests, Goálpára District, Assam.

No.	Position of line of Survey.	Number of trees counted. Sal. I. Under 1 cubit.	Sal. II. From 1—2 cubits.	Sal. III. From 2—3 cubits.	Sal. IV. From 3—4 cubits.	Chelani. I. Under 1 cubit.	Chelani. II. From 1—2 cubits.	Chelani. III. From 2—3 cubits.	Chelani. IV. From 3—4 cubits.	Area surveyed in Acres. Sál forest.	Lower hill forest.	Grass-land.	Total.	Remarks.
1	From Adubgaon village lands, going north to boundary of forest.	B	610	114	2	....	...	....	1	21·72	....	1·58	23·30	Grass-land, and then saplings much burned, getting better towards the north, with poles and young high forest.
	From Abulgaon village lands, going south to boundary of forest.	C	2,053	885	18	...	3	2	3	52·32	4·28	32·80	89·40	High forest, intersected by much grass-land, and gets very bad towards line No. 12, thence poles and high forest. The growth is scanty to the south, with much grass and lower hill forest.
2	From line No. 5, in the north, to southern boundary of the forest.	B	3,293	389	11	....	1	....	...	70·24	9·50	31·28	111·02	Grass-land and lower hill forest for a quarter-mile, then well-growing poles, bounded by grass-land to the north of village lands, then good poles interrupted by grass land. High forest to south of line No. 13.
3	Ditto ditto ..	C	2,563	257	19	....	14	12	10	67·62	22·62	35·41	125·85	For quarter-mile grass and scattered Sál, then good poles and one mile of grass to village land. Beyond this, two miles of good poles, followed by grass-land and lower hill forest.
4	Ditto ditto ..	C	3,010	315	29	....	8	20	14	53·90	25·00	1·90	80·80	Fine high forest for quarter-mile, then good poles to line No. 7. High forest on rest of line to Gourang, with strips of lower hill forest.
	From Sowmaka River to Gourang River, west to east, as in map.	C	540	158	4	....	11	6	2	14·06	4·13	25·68	43·87	To Bismari River, close-growing Sál, beyond scattered Sál, in patches with much grass-land.
6	From village land of Adubgaon, west to east, to Gourang River.	C	1,430	180	6	....	11	17	1	33·60	6·09	4·06	43·75	To Bismari River, much grass and scattered Sál then good young high forest, and poles to 1½ miles from Gourang River, where there is much grass.
	From village land of Khetiguri, east, to Gourang River.	C	1,000	162	1	....	2	3	...	14·00	1·60	7·00	22·60	One-third mile grass, then one-fourth mile young Sál, then grass for one furlong, and beyond good poles and young high forest to Gourang River.
8	From village land of Abulgaon to hat of Khetiguri, and thence, east, to the Gourang River.	A	900	124	6	....	2	2	2	29·81	1·69	2·04	33·54	From Abulgaon to Khetiguri close-growing poles, then saplings and seedlings to Gourang River.
9	From Sowmaka River, east, to Gourang River.	A	2,980	327	2	....	2	7	....	56·76	2·86	2·98	62·60	From Sowmaka River to Mithagaon, thin forest, then close poles and saplings to Gourang.
10	Ditto ditto .	B	1,930	123	5	...?	1	...	....	35·54	6·16	15·93	57·63	For 1½ miles strips of high forest in grass-land, then fine young poles and high forest, improving towards Gourang Nadi.
11	Ditto ditto ..	B	1,730	275	7	....	4	....	....	40·40	5·23	11·82	57·50	Two miles of fine high forest, with one patch of grass, beyond much lower hill forest and grass-land, and little Sál.
12	Ditto ditto ..	A	1,060	133	12	....	2	....	....	29·54	....	9·82	39·36	Poles well stocked and seedlings, then after half-a-mile patchy and bad for half-a-mile; thence good poles and saplings to line No. 8, and then grass-land.
13	Ditto ditto ..	B	1,094	229	5	....	4	10	2	26·76	5·94	11·30	44·00	High forest to grass, as in map, then poles, and high forest to path, and then poles and saplings to Gourang.
	Total ..	....	24,193	3,298	127	....	63	79	35	546·27	95·35	193·60	835·22	
	Contents of Forest ..	....	4,55,232	62,057	2,390	....	1,185	1,486	658	10·279	1,794	3,643	15·716	

NOTE.—A denotes abundant seedlings.
B " disseminated.
C " scanty.

W. R. FISHER,
Assistant-Conservator of Forests, Goálpára Division.

APPENDIX IV.

Statement showing the result of an Examination of the concentric rings of twenty Sál-trees in the Sidli Forests, Goálpára District, Assam.

No. of Tree.	Average radius, including sap-wood.	Average radius of heart-wood.	Number of concentric rings in radius, including sap-wood. From centre. To 2·86 inches	To 5 73 inches.	To 8 6 inches	Total	Number of concentric rings in heart-wood only.	Length of stem
	inches.	inches.						feet.
1	9 17	7	28	54	102	120	67	17
2	9 00	5·38	34	72	99	104	67	30
3	8 65	6 10	25	46	65	65	47	42
4	8·15	5·40	30	58	.....	74	56	42
5	7·75	6·00	28	53	.....	89	56	19
6	7·37	6·25	30	62	.....	85	71	16
7	7·25	5·55	31	57	.....	74	54	33
8	7·20	5·37	19	39	.....	47	36	32
9	7 03	4 44	27	46	.....	61	41	39
10	6·87	5·20	33	52	.....	64	46	.....
11	6 65	3 75	20	38	.....	43	26	.....
12	6·37	4·62	36	69	.....	74	56	36
13	6·35	4·85	26	52	.....	59	45	32
14	6 25	2 25	25	37	.....	38	26	20
15	6·25	4 9	35	54	.....	70	54	26
16	6·20	4·5	30	53	.....	59	46	30
17	6·15	4	21	40	.....	42	32	35
18	6·13	4·7	33	59	.....	68	52	24
19	5·75	4 3	23	43	.....	44	34	30
20	5 75	3·75	27	47	.....	47	33	18
	Average		28	52	89	.....	.....	.....

W. R. FISHER,

Assistant-Conservator of Forests, Goalpára Division.

APPENDIX V.

Consumption of Tea-boxes in the Province of Assam in 1875.

Number of tea boxes imported by the India General Steam Navigation Company into Assam Proper	Number of tea-boxes imported by the Rivers Steam Navigation Company into Assam Proper	Total of tea-boxes imported into Assam Proper	Boxes of tea exported by the India General Steam Navigation Company from Assam Proper.	Boxes of tea exported by the Rivers Steam Navigation Company from Assam Proper.	Total tea exported from Assam Proper.	Number of tea-boxes imported by the India General Steam Navigation Company into Sylhet and Cachar	Boxes of tea exported by the India General Steam Navigation Company from Sylhet and Cachar.
From Calcutta.	*From Calcutta*				*Chests.*		*Chests*
77,464	4,116	1,35,718	99,983	37,119	1,37,102	6,443	54,381
From Kushtia and Goalundo.	*From Kushtia.*						
23,407	30,731	.....	.....	.....	.....	.....	.....
Total ...1,00,871	34,847	1,35,718	99,983	37,119	1,37,102	6,443	54,381

NOTE.—Average quantity of tea packed in one box is 90 lb.
Cost of teak wood boxes, including freight from Burma is in Calcutta, Re 1 5 each
Cost of cedar-wood boxes ditto ditto " 1 4 "

Extract from the Proceedings of the Chief Commissioner of Assam in the Revenue Department, dated 6th September, 1876.

READ—

Progress Report of Forest Administration of the Province of Assam, for the year 1875-76.

RESOLUTION.

THE Chief Commissioner has read with interest Mr. Mann's very careful report. It is, properly, much shorter than the report for 1874-75, which, being the first Report on Forest Administration in Assam, contained a large amount of information, which, once given, it was not necessary to reproduce in a subsequent report.

Paragraph 2.—The alteration of the boundaries of the Nowgong, Sibságar, and Nága Hills districts, so as to bring the entire forest division of Golághát within the latter district, was a measure adopted with a view to simplifying the management of this division. This result, Colonel Keatinge understands, has been obtained.

Paragraph 4.—The revised Forest Rules alluded to by the Deputy-Conservator have been approved of by the Government of India. The Chief Commissioner trusts that the adoption of these rules will conduce in no slight measure to the better management of the Assam forests. They are specially designed to associate civil officers and mouzahdars with the Forest Department in the management of our large reserves, which are necessarily at present very unproductive.

Paragraph 8.—The completion of the inspection of the Assam forests is a matter for congratulation. Until this inspection had been completed, it was a matter of some difficulty to carry out measures of conservancy on a large scale.

Paragraph 13.—At some future period, when communications in the Gáro Hills are more opened out, the sâl forests in the interior and the southern parts of the hills may still, by sawing the wood in the forest, become very valuable property; and their proper conservancy is a matter of much importance.

Paragraph 16.—It may be possible in time to wean the Gáros from their present system of jhooming; but, as Mr. Mann says, it will be necessary to proceed with great caution. The Gáros have given up other habits, to which they were apparently as strongly wedded; but these habits were not connected with their daily supply of food. Any radical alteration of their system of agriculture must be a work of many years; but it may be possible to restrict their jhooming operations to lands which have been cultivated within the last ten to fifteen years, and to exclude them from the forests of older growth.

Paragraph 18.—It is apparent that, even now, the forest conservancy of this Province is of vital importance to Eastern Bengal. Before very long, Assam timber will be a necessity in the great cities of the Eastern Delta.

Paragraph 21.—The marked rise in the market-value of timber since 1865 is not altogether a matter for satisfaction, as it has resulted mainly from a decreased supply, owing to excessive fellings.

Paragraphs 24—25.—Now that the inspection of the Gáro Hills forests is over, the Chief Commissioner hopes that it may be possible to put a check on the indiscriminate felling of the trees. The question will form the subject of a separate communication to the Deputy-Conservator. It will, probably, be necessary to impose a fixed general tax on the cutting of bamboos, in place of the variable duty now levied.

Paragraphs 28—29.—Colonel Keatinge agrees with Mr. Mann in thinking that fire-protection in the Gáro Hills will be an easier matter than it at first appears. People who have some idea of the benefit resulting from fire-protection will be more apt pupils than those who have none. The appreciation by the Gáros of the necessity for conserving the mixed lower hill forests is a most hopeful sign. To have successfully impressed this necessity on the Gáro mind is not the least useful work that Captain Williamson has done in these hills. The Chief Commissioner quite sees the desirability of declaring these forests to be a reserve; but he fears that the work of demarcating and protecting them by a boundary-path will be a very costly operation.

Paragraph 32.—The destruction caused to the forests by fire during the dry season was most deplorable, but was in no wise attributable to any laxity of supervision on the

part of the forest officers. On the contrary, they appear to have made extraordinary exertions to save the forests. The year was an exceptional one, and it is not likely that such severe westerly winds will occur again for some time.

Paragraph 38.—Since it is known that sâl forests will spread naturally in the climate of Assam, if only protected from fire, there is no necessity to continue the experiment of planting out saplings. It is satisfactory, however, to learn that the experiment, so far as it has been carried out, has been completely successful.

Paragraph 40.—The Nowduar forest has now been gazetted as a reserve. The Akha Chief Midhi, however, retains certain rights within it, which will be accurately defined.

Paragraph 43.—The instance given by the Deputy-Conservator shows how necessary it is to keep incessant watch, so as to prevent the hill tribes encroaching on the Golághát forests. The Chief Commissioner is glad to see that the Sub-Assistant-Conservator in charge appears to be fully aware of this necessity.

Paragraphs 46—49.—The forests in the Eastern Duars are, perhaps, owing to their situation, the most valuable forests in the Province. But, on account of the hitherto almost utter absence of conservancy, they have been so worked out, that for very many years the revenue derived from them must be insignificant. These forests have now been gazetted as reserves, and it is hoped that they will rapidly improve.

Paragraphs 51—57.—The survey and demarcation of these reserves by the forest officers is a most important measure, and Colonel Keatinge notes with much satisfaction the good beginning made by Messrs. Fisher and D'Arcy. The valuations of growing material, now commenced, are most essential to the success of conservancy measures in these valuable reserves.

Paragraph 58.—The most strenuous exertions must be made to protect these reserves from fire. But the Chief Commissioner quite recognizes that, without a much larger establishment than he can give, fire-protection in the Eastern Duars presents considerable difficulty. These great plains of grass, from 6 to 10 feet in height, require proportionately wide fire-paths to secure the forest. The woodcutters who set fire to the grass should be prosecuted criminally for mischief; and the same procedure should be adopted with regard to hunters setting fire to the grass in the reserves,—and all hunters convicted of so doing should be at once deprived of their licenses to carry arms. If the Deputy-Conservator will address the Chief Commissioner generally on the subject of fire-protection in the Eastern Duars, the necessary orders will be given to the civil officers. It would, perhaps, be a good thing to insert some such clause as Mr. Mann proposes in the permits granted to the woodcutters. Patient teaching of the people is, as the Deputy-Conservator remarks, the only way in which damage to the forests from outside fires can be effectually prevented.

Paragraphs 60—61.—Colonel Keatinge hopes that much will be done during the present year to consolidate and render more complete the system of forest conservancy in Cachar. As yet, only a beginning has been made. The question of forest reserves in Sylhet is one of much difficulty, owing to the permanent settlement, and to other causes connected with the revenue administration in Sylhet. As soon as the claims of the mirasdars are satisfactorily disposed of, it is hoped that it will be possible to gazette some valuable reserves in that district.

Paragraphs 65—67.—Mr. Mann justly states that plantations are very expensive, and cannot, in our present financial position, be further extended; what exists only can be maintained. The most important of all the plantations is, certainly, the caoutchouc plantation in the Charduar. This must be not only kept up, but extended at all hazards

Paragraphs 79—82.—Of exotic trees, only those that it has been proved have done well should in future be planted.

Paragraph 85.—The Chief Commissioner believes that the mouzahdars are now becoming fully aware of their duties, with regard to forest conservancy. This is a very hopeful sign.

Paragraph 96.—The sooner all the dead sâl-wood is removed from the Eastern Dúar forests, the better, as there is constant fear of fire during the operations.

Paragraph 98.—The account given by Mr. Fisher of the timber trade in the Goálpára district is most interesting.

Paragraph 102.—Colonel Keatinge attributes the fact that the tea-planters of Assam Proper find it cheaper to import tea-boxes from Calcutta than to purchase them locally, to the exorbitant cost of labour in the Brahmaputra Valley. This will only be corrected by improved communications with the outer world.

Paragraphs 104—109.—For some time yet, for the reasons given by Mr. Mann, the Forest Department in this Province must continue to be a spending department. But the Chief Commissioner has little doubt, but that all present expenditure will in the future be amply repaid, with interest. The large increase in the receipts over the receipts of the year 1874-75 is very satisfactory.

Paragraph 111.—Colonel Keatinge is glad to see that the Deputy-Conservator was able to make a prolonged tour, and to personally inspect most of the forest divisions.

Paragraph 112.—It is satisfactory to learn that there were no casualties among the elephants belonging to the department during the year. The Chief Commissioner hopes that Mr. Mann bears in mind what he said in his Resolution on the Progress Report on Forest Administration for 1874-75, as to the desirability of employing buffaloes instead of elephants. Colonel Keatinge is still of the same opinion as he then was.

Paragraphs 113—118.—Colonel Keatinge approves generally of the programme of work for 1876-77.

CONCLUSION.—In conclusion, the Chief Commissioner desires to tender his thanks to Mr. Mann and his subordinates, for the manner in which they discharged their several duties during the year under review. He notes with much pleasure the high terms in which Mr. Mann speaks of his subordinates. These officers have most important duties to perform, and they carry them out under great difficulties. Their charges being all new, they are not so well-lodged as they should be, and the newness of their stations makes them more unhealthy than older ones would be. Colonel Keatinge desires that much attention should be paid to securing healthy sites for, and sufficient clearance around, all the foresters' stations.

By order of the Chief Commissioner of Assam,

S. O. B. RIDSDALE,

Secretary to the Chief Commissioner of Assam.

No. 2,930.

COPY forwarded to the Deputy-Conservator of Forests, Assam.

No. 2,931.

COPY, with 400 copies of the report, submitted to the Government of India, in the Department of Revenue, Agriculture, and Commerce.

No.

COPY, with copy of the report, forwarded to the Deputy-Commissioner of

By order of the Chief Commissioner of Assam,

S. O. B. RIDSDALE,

Secretary to the Chief Commissioner of Assam.

SHILLONG:
The 6th September, 1876.

No. 32.

FROM

G. H. M. BATTEN, ESQ.,

Offg. Secretary to the Government of India,

To

THE CHIEF COMMISSIONER OF ASSAM.

Department of Revenue, Agriculture, and Commerce

Forests.

Dated Calcutta, the 12th January 1877.

SIR,

I AM directed to acknowledge the receipt of your letter, No. 2950, dated the 8th September last, forwarding the annual report of the Forest Department in Assam for 1875-76, and to communicate the following observations and orders by the Government of India.

2. The examination of the forests in the Garo Hills, recorded in paragraphs 8 to 29 of the report, has brought to notice a much larger extent of sâl and other valuable forest than the Government of India was aware of. It is understood that it is contemplated to demarcate and preserve a portion of these forests, which are important because they yield a large quantity of timber and bamboos for the requirements of the open country of Eastern Bengal.

3. The chief addition to the reserves made during the year under review consisted of 80 square miles in the Tezpur district, comprising the principal plantations of *Ficus elastica*, and of 348 square miles, chiefly sâl-producing forest, in the Eastern Duars of the Goalpara district. These last-named forests were reported upon as long ago as 1868, and it is to be regretted that demarcation was delayed so long.

Your determination to use the most strenuous exertions in order to protect these forests from fire is approved, and I am directed to state, with reference to the concluding passage of paragraph 58 of the report, that there will be no hesitation on the part of the Government of India in sanctioning the needful funds for this purpose.

4. It has been noticed that the area of the reserved forests was increased during the year under review from 603 to 1,033 square miles, and of this area 35,274 acres were protected from fire.

Under plantations an addition of 194 acres is reported, the chief addition being 50 acres in Kulsi, of which 30 were caoutchouc and 20 teak, and an addition of 140 acres to the Charduar India-rubber plantation. The aggregate area of stocked plantations at the end of 1875-76 was 502 acres.

The Governor-General in Council is glad to notice from your review of the report, that it is intended to extend the Charduar India-rubber plantation. The Government of India is not disposed to assent to what is understood to be the Deputy Conservator's view, that experimental plantations of other trees should not be extended, where continuous and competent supervision is available. Such experiments should certainly be continued. The success, recorded in paragraph 38, of planting sâl saplings is interesting, and

though the sál tree spreads naturally most readily wherever the soil is suitable and fires are excluded, the experimental cultivation of this tree on a small scale should be continued, for these experiments will furnish valuable information regarding the habits and requirements of the sál tree. So also with teak; it has not yet been proved whether the cultivation of this tree will be remunerative in Assam, but this can only be ascertained by its experimental cultivation on a somewhat extended scale.

5. The comparison of the actuals with the estimates given in paragraph 106 of the report, should in future be omitted from the annual reports, as their discussion belongs properly to the annual statements of "Actuals." The transactions of the year, exhibited under the great main heads of Revenue and Expenditure, appear to have been as follows :—

	Receipts.		Charges.	
		Rs.		Rs.
I. Departmental timber operations	I, 1 and 3	9,673	I, 1; half of VIII, IX & B	20,905
II. Other revenue ...	I, 2; II; III and IV ...	97,629	II; V; X; one-quarter of VIII, IX and B ...	11,938
III. Formation, protection and improvement of the forests	... ...	.....	III; IV; VII; one-quarter of VIII, IX and B ...	29,041
Total ...	... ...	1,07,302	.. ...	61,884

The Deputy Conservator should be directed in future reports to give a brief analysis of the receipts and charges in the manner here indicated.

6. The receipts and charges of the Department for the last two years compare as follows :—

		1874-75.	1875-76.
		Rs.	Rs.
Receipts		64,749	1,07,302
Charges	A	31,138	33,187
	B	28,385	28,697
	Total charges	59,523	61,884
	Surplus	5,226	45,418

The financial results have been as satisfactory as could under the circumstances of the case have been expected. The receipts have increased considerably while the charges have only increased to an insignificant extent, and the year closed with a cash surplus of Rs. 45,418. This surplus is, however, due entirely to the revenue realised by Civil officers, which amounted to Rs. 96,388, the charges incurred by them having only been Rs. 9,032. The forest revenue realised by the Forest officers is as yet insignificant, while the expenditure of the Department is chiefly incurred in those forests which are in charge of the Forest officers. From paragraph 100 of the report it would appear that the accounts of the receipts and charges on account of forests by Civil officers are not rendered in accordance with a regular system. Steps should be taken to amend this in consultation, if necessary, with the Comptroller-General.

7. The facts regarding the tea boxes imported into Assam and Cachar, recorded in paragraph 102 of the report, are remarkable. At first sight it would appear anomalous that large quantities of timber are imported into Assam for this purpose; but, as explained by you, the high cost of labour in Assam probably counterbalances the cost of timber in Calcutta and its carriage to Assam. On the other hand, the tea boxes used in Sylhet and Cachar are chiefly manufactured in those districts. The information given in the appendix of this and previous reports, regarding the useful trees indigenous in Assam

and the detailed register of reserves, as well as the additional information concerning the rate of growth of the sál tree, are very useful.

8. In conclusion I am directed to state that, in the opinion of the Government of India the progress reported in Forest administration in Assam has been satisfactory.

I have the honour to be,

SIR,

Your most obedient Servant,

G. H. M. BATTEN,

Offg. Secretary to the Government of India.

1877.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

FORESTS.

To

THE CHIEF COMMISSIONER,
ASSAM.

No. 32.

Dated Calcutta, the 12th January 1877.

SUBJECT.

REVIEW of the Forest Report of Assam for 1875-76.

Government Central Press.—No. 563, R., A. & C.—12-1-77.—450.

CONSERVATOR'S REPORT.

Annual Report No. 1170—24, *F., dated 24th July* 1876, *on the Management and Conservancy of the Coorg Forests for the Financial year* 1875—76, *by* CAPTAIN G. J. VAN SOMEREN, *Conservator.*

I have the honor to submit the Coorg Forest Report, for the year 1875—76.

INTRODUCTORY.

2. Nil.

SPECIAL.

HEAD I.—STATE FORESTS.

3. No alteration has been made in the area of State Forests.

No.	Reserved Forests.	Area in 1874—75	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875—76.
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
1	Dubare	40	...	...	40
2	Devamurchi	25	...	...	25
3	Mavakal	17	...	...	17
4	Arekere-nad	50	...	...	50
5	Hattugat-nad	75	...	...	75
6	Nalkere	117	...	...	117
7 & 8	Vurti and Kerti	Not estimated.			
9	Chembu and Kari-nad	10	...	...	10
10	Anekadu	19½	...	...	19½
11	Ganagur	11¾	...	...	11¾
12	Yedav-nad	10	...	...	10
	Katipur in North Coorg	5	...	...	5
	Total.....	380¼	...	...	380¼

4. *Demarcation.*—The out-turn of work and cost is shewn in the following tabular statement:—

No.	Name of Forest.	Length of new lines cleared.	Cost per mile.	Length of old lines cleared in miles.	Cost per mile.	Survey stations fixed.	Cost per station.
1	Dubare...	3	23 0 0	...	...	45	0 7 8
2	Devamurchi	...	...	5	8 0 4	...	...
3	Mavakal	...	...	4	3 4 0	151	0 7 6
4	Arekere-nad	12	7 15 4	2	8 12 0	144	0 5 8
10	Anekadu (Attur)	...	..	6	0 13 7	...	...
11	Ganagur	30	21 13 4	43	4 6 9	735	0 3 11
12	Yedav-nad	43	21 0 0	60	2 0 0	651	0 3 11
		88	...	120	...	1,726	...
	Katipur...	...	..	2	5 10 3	105	0 2 5
	Total	88	...	122	...	1,831	...

Summary.

		Cost per mile.	Total Cost.	Remarks.
Length of new lines cleared, miles	88	19 9 2	1,722 9 11	
Up-keep of old lines	122	3 4 5	399 15 8	
Survey stations	1,831	0 4 4	501 9 4	
Total.....		...	2,624 2 11	

5. At the close of 1874—75, total length of demarcation lines was 242¾; additions during 1875—76 miles 88; total at close of 1875—76 miles 330¾. It is satisfactory to notice that the out-turn of work is far above that of 1874—75, while the cost has been greatly reduced, the details being.—

	New lines.	Cost.	Up-keep.	Cost.	Survey Stations.	Cost.
1874—75	48¾	22 11 2	41½	6 3 11	401	0 9 6
1875—76	88	19 9 2	122	3 4 5	1,831	0 4 4

The only deciduous forest remaining to be completed is that of Nalkere, where it is estimated that miles still remain to be done. Hattugat-nad not quite completed on 31st March, was finished in April 1876. The two evergreen forests Vurti and Kerti and that of Chembu are still untouched, and it is not intended to demarcate them at present.

6. In addition to demarcation work proper, 10¼ miles of new lines were cut in Devamurchi forests, and 191 stations fixed, for the survey of that portion of the forest which it is intended to hand over to coffee planters should the Government of India see fit to do so.

7. *Survey.*—The following forests are completely surveyed according to the Survey Department. No. 1 Dubare; No. 2 Devamurchi; No. 3 Mavakal; No. 4 Arekere-nad; No. 10 Anekadu; No. 11 Ganagur; No. 12 Yedav-nad. Maps of portions of some of these forests have been received in the Conservator's Office, but till they are all in, the actual areas cannot be compared with estimates made very roughly, see my No. 118 of the 18th April 1871, to Secretary to the Chief Commissioner in Public Works Department. The total area surveyed during 1875—76 is given at 28,204·66 or 44 square miles nearly; all done by the Revenue Survey, one party of which is paid for by the Forest Department.

SECOND SECTION.

Requirements of the Population in the vicinity of State Forests how provided for.

8. The Superintendent again was unable to take up this work in North Coorg, further than allotting Udves or village forests in some parts of the country.

THIRD SECTION.

Protection of the Forests.

9. Full instructions were given to the Assistant Conservator in July 1875, how to carry out this work; and he was directed to commence operations in Anekadu, a naturally rich, but much outworked forest. His attention was frequently called to the urgent nature of the work, but I regret to state that he allowed time to pass, and nothing was done. Late in the season he gave out the work on contract, but at rates so very high, and under conditions so unfavorable and inconvenient, that I at once refused my sanction thereto. No valid excuse can be found for the failure to carry out this important work. Fortunately in most of the forests early rains greatly mitigated the usual effects of the yearly fires, and but little damage is reported to have been caused therein by fires this year.

10:—

(1.) Dubare:—The demarcation lines cut are in good order, and kept clean. No jungle fires occurred in the forest this year. Bamboos plentiful, as also small timber and poles.

(2.) Devamurchi:—The old lines require cleaning, but the lines cleared during the year are in good order. A portion of the forest burnt in January and February; chiefly dried bamboos and grass were burnt. Green bamboos plentiful. State of forest generally good.

(3.) Mavakal:—Demarcation lines require cleaning. Portion of forest burnt; but little damage done. Forest looking well, but under-growth poor.

(4.) Arekerenad:—Demarcation lines are in good order. Forests in good condition, heavily timbered in spots.

(5.) Hattugatnad & (6) Nalkere:—Demarcation lines are in good order. Undergrowth very dense. Timber heavy.

(9.) Chembu, Karinad:—Evergreen.

(10.) Anekadu:—Demarcation lines are in good order. Bamboos and timber of all kinds very small; and the forest for some years past having been worked for the Military Department, and for supplying Fraserpet and Suntikoppa depôts, will be closed and rigidly conserved.

(11.) Ganagur:—Demarcation lines are in good order. Bamboos are of the small kind, and are not found in large quantities excepting in one or two places which are accessible to carts. Timber small, but good.

(12.) Yedavnad:—Demarcation lines are in good order. Forest well timbered; and has not been overworked.

11. Breaches of forest rules are given below:—

Prosecutions for breaches of Forest Rules.

Range.	No. of Prosecutions.		Convictions obtained.		Remarks.
	No. of Cases.	No. of Persons.	No. of Cases.	No. of Persons.	
Coorg	2	7	1	3	1 Pending.

FOURTH SECTION.

IMPROVEMENT AND EXTENSION OF THE FORESTS.

12. Plantations:—

Plantations.	Area in 1874—75.	Total Cost.	Area added during 1875—76.	Amount expended during 1875—76.	Total Area up to 1875—76.	Total Expenditure up to 1875—76.	Remarks.
1. Karmad	214	14,489	15	1,697	229	16,186	Teak.
2. Kutampolle	152	6,555	...	403	152	6,958	Do
Total.....	366	21,044	15	2,100	381	23,144	

Under the orders of the Government of India (see para 7 of No. 5 from Secretary to Government of India, Department of Revenue, Agriculture and Commerce, Forests, dated 7th January 1876), I have in this statement included only those areas which are fairly stocked with trees. In last year's statement, one more teak plantation (Karepur), and two sandal plantations, Vaddar Ane and Gangvara, were shewn. I stopped work in the two former early in 1874-75. The work at Gangvara has been *very unsatisfactory*; chiefly owing to want of supervision and care.

13: At Karmad, no further extensions will be made, the last orders received, directing me to turn the attention of the Assistant Conservator to improvement of existing forests. The work at Kutampolle was limited to up-keep only.

14. At Karmad, trees planted out in 1868—69 have attained an average height of 30 feet. Of those planted out between 1870—75, the maximum is 25 feet in height, the minimum 2 feet. I refrain from giving certain girth measurements furnished to me, as I think it best to have them worked out again.

In February 1876, a fire occurred in this plantation, causing however very slight damage. The Manegar in charge was found to have been absent without leave from the plantation at the time, and his services were dispensed with in consequence.

15. In Kutampolle, the maximum growth of trees planted out in 1868—69 is 35 feet in height. Girth measurements will not be given for this plantation. Results of fresh measurements still to be made will be supplied after the next personal inspection by the Conservator.

16. *Roads and Buildings.*—Rs. 223—5—0 were spent in up-keep of various roads and bridges leading to depôts, and Rs. 40 in repairing huts; total Rs. 263—5—0.

FIFTH SECTION.

17. Actual yield of forests, disposal of timber, &c:—

Forests.	Teak.		Junglewood.		Teak poles.	Jungle-wood poles.	Bamboos.	Firewood Cart-loads.	Fire sticks.	Remarks.
	Logs.	C. F.	Logs.	C. F.						
Nalkere..	293	7,057	...	...	...	..	...	...	...	
Ballumani and Mullalikatte Jungles	1	19	31	953	...	898	26,200	...	2,530	
In various forests for the supply of small depôts.										
Virarajendrapet	...	...	27	733	...	194	10,000	...	...	
Maldare	...	...	46	1,089	...	2,223	22,750	...	1,008	
Fraserpet	105	1,907	184	3,700	53	852	74,098	2,377½	1,114	
Suntikoppa	...	...	...	...	...	...	...	...	260	
Sidlingapur	...	...	5	96	...	...	2,021	...	910	
Kesarvalli	...	...	...	...	..	...	1,827	...	..	
Somavarpet	...	...	538	4,130	...	460	45	...	...	
Arkalgúd	...	...	842	7,357	...	...	...	..	...	
Mercara	...	..	54	1,268	...	372	20,000	...	...	
Total.....	399	8,983	1,727	19,321	53	4,998	156,941	2,377½	5,822	

18. In addition to the above, timber and bamboos to the value of Rs 5,200 were felled and supplied free of charge except felling to the Military Department for the building of the lines of the 28th Regiment, Madras Native Infantry. The material furnished was:—

			C. F.
Junglewood logs	..	..	..	50—1,110
Do posts	..	..	..	4,000—4,000
Bamboos	.	..	...	40,000

19. Timber collections and sales at depôts.

Depôts.	Collections.									Sales.									
	Teak.		Junglewood.		Teak poles.	Junglewood poles.	Bamboos.	Firewood cart loads.	Fire sticks.	Teak.		Junglewood.		Teak poles.	Junglewood poles	Bamboos.	Firewood cart loads.	Fire sticks.	Realization in Rs.
	Logs.	C. F.	Logs.	C. F.						Logs.	C. F.	Logs.	C. F.						
Húnsúr ...	246	5,663	...	...	...	...	...	...	...	282	7,636	7	205	...	...	...	...	...	7,107
Titumati ..	2	30	18	507	...	856	*22,667	..	2,530	19	345	74	1,895	3	747	24,125	...	2,507	2,911
Fraserpet firewood depôt...	...		..	...	...	...	...	2,377¼	...	...	...	...	...	...	...	...	2,139¼	...	1,600
Small depôts..	75	1,056	1,591	15,688	28	4,239	120,847	..	3,462	23	289	954	12,326	100	3,536	140,637	...	3,502	12,599
Total	323	6,749	1,609	16,195	28	5,095	143,514	2,377¼	5,992	324	8,270	1,035	14,426	103	4,283	164,762	2,139¼	6,009	24,217

20. The contemplated operations in timber and bamboos on which the original estimates for the Budget were framed, were modified during the year, and the regular estimates were placed at a lower figure in consequence. The financial results will be reported on in their proper place.—

We proposed to sell—			and sold.*	
Teak . ..	11,250	C. F.	8,270 C. F.	Teak.
Junglewood	25,520	„	19,536 „	Junglewood.
Poles	220	Cart-loads.	4,386 . ..	Poles, &c.
Bamboos	275,000		204,762	Bamboos.
Firewood	1,800	Cart-loads.	2,193¼	Cartloads of firewood.
			6,009	Firesticks.

21. The largest decrease was under junglewood, owing to less sales than anticipated; of bamboos we sold 70,238 fewer than original estimates, and supplied 393¼ more cart-loads of firewood and 6,009 firesticks more than the estimates.

22. The small depôt scheme, the results of which in 1873—74 shewed a profit of Rs. 4,373, and in 1874—75 a deficit of Rs. 2,236, has in 1875—76 resulted in a gain of Rs. 2,391. The scheme was sanctioned more with the view of saving the forests than as one intended to result in a mere money profit. The period of trial sanctioned will close on 31st March 1877.

23. During 1875—76, and in the current year, I have found it expedient to close all but two depôts, those at Somvarpet and Fraserpet, and to open one at Mercara.

24. The financial results of each depôt are given below:—

Depôt.	*Sales.* Rs.	As.	P.
1. Virajpet	1,713	9	11
2. Fraserpet	4,168	8	3
3. Suntikoppa	256	11	6
4. Sidlingapur	230	3	6
5. Kesarvalli	199	9	0
6. Somavarpet	1,421	11	11
7. Mercara	1,190	12	2
Total .	9,181	2	3

Depôt.	*Sales.* Rs.	As.	P.
(a) Maldari	3,050	7	11
(b) Arkalgúd	345	8	0
Value of some fire sticks sold at different depôts	21	6	6
Grand Total. ...	12,598	8	8

*These figures include the issues to the Regiment.

25. The carriage to (1) Virajpet depôt being very expensive, the actual profit was so small as not to be worth retaining. (3) Suntikoppa, (4) Sidlingapur, and (5) Kesarvalli did not pay expenses and were closed. The sales at (*a*) Maldari were by auction. This is merely a forest depot, whence wood is sent to Virajpet. No establishment is kept up; a Forest Watcher looking after the wood. The results would tend to shew that this place might be taken up as a depôt permanently and the results of the current year will be watched. (2) Fraserpet depôt is managed by the Sandalkoti Daroga who is stationary at that place. (6) Somvarpet paid its way, and (*b*) Arkalgúd (in Hassan District) was opened as an experiment, under the Assistant Conservator of that Forest Division, and without any extra expense. The Mysore ryots in Hassan District are much in want of wood. Wood is not to be found in sufficient quantities and in accessible places in Government lands in Hassan, and I determined at the close of the year to send down a small quantity of Coorg wood from Somvarpet on trial sale. The sales up to 31st March 1876 just paid all expenses, but since 1st April the results have been better. (7) Mercara was opened late in the year at the request and recommendation of the Superintendent, who considered that wood was much required at that place.

26. The Government of India originally sanctioned a monthly expenditure of Rs. 343 on the establishment necessary for felling the wood for, and for the management of these depôts. This sum was first reduced to Rs. 255, and by the last arrangements to Rs 185, by closing depôts and re-arranging the circles where wood is felled. I trust these measures will result in better financial results during 1876—77.

27. Sandalwood:—

Collection in tons.	Cost per ton.	Tons sold.	Average Rate obtained per ton.	Amount realized in Rupees.	Remarks.
Billet wood 69¾ ..	45—10—6	74½	593 2 7	44,190	Good wood.
Roots 15¾ ...		15½	463 2 0	7,178	
Chips, &c. 1 ...		3½	48 3 4	169	Inferior.
Total 86½ ...	...	93½	...	51,537	

28. No growing wood was felled. Compared with last year, the average rate per ton for good wood (see Remarks-column in Statement), which includes roots, was rupees 570—12—2 per ton; and for all kinds, Rs. 551—3—2; or Rs. 69—4—10 above the average of last year. The Coorg sales followed those of Mysore.

29. *Inspection of lands applied for by coffee planters.*

The question of opening to coffee planters a portion of the State Forests of Devamurchi is under consideration. It has been favorably reported on by the Superintendent and the Conservator for reasons given already in correspondence.

30. During this year the Assistant Conservator and his subordinates inspected and reported on 61 plots of land. The value of the timber reported as sold on the lands parted with is said to be but Rs. 419—8—0. I have asked for more information about this, for the amount seems to me strangely *small.

* Since writing the above the Superintendent has informed me that none of the 61 plots inspected and reported upon by the Forest Department in 1875—76 were sold, as they had not been measured by the Survey Department.

FINANCIAL RESULTS.

Receipts.	Estimates.	Actuals.
I. Revenue from Wood.		
1. Brought to depôts —		
(a) Timber and bamboos ...	30,400	18,961
(b) Firewood and charcoal ...	1,800	1,970
(c) Sandalwood	25,600	56,653
3. Confiscated, drift and waif wood.	2,000	597
II. Revenue from Minor Produce.		
1. Grazing dues and sale of grass.	...	83
2. Other minor produce ...	24,000	26,467
IV. Miscellaneous.		
1. Fines and forfeitures ...	...	31
2. From refunds to the Department.	...	4
3. From other sources ...	200	2,691
Total.....	84,000	1,07,457
Deduct Expenditure.....	48,240	37,679
Balance.....	35,760	69,778
Deduct—		
Amount realized on account of previous years	21,931	
Amount due for transactions during the year under review but not yet disbursed	2,336	
		24,267
Balance.....		45,511
Add—		
Outstandings at close of the year ...	24,060	
Difference between the value of stock at the commencement and close of the year	5,233	
Amount disbursed on account of transactions of previous year ...	498	
		29,791
Net Results of the year ...		75,302

Disbursements.	Estimates.	Actuals.
A. CONSERVANCY AND WORKS.		
I. Timber Operations.		
1. On wood brought to depôts.—		
(a) Timber and bamboos ...	18,000	12,868
(b) Firewood and charcoal ..	1,800	1,655
(c) Sandalwood	4,000	3,949
III. Cost of Forest Organisation.		
1. Demarcation, &c. ...	2,700	2,743
3. Surveys	2,300	2,030
IV. Cost of treatment and creation of forests.		
1. Natural forests.—		
(a) Protection from fire ...	250	...
(d) Reboisement or restoration of denuded areas ...	4,000	1,798
(2) Artificial forests		
(c) Improvements and conservation.	900	595
VII. Works of Utility for the development of Forests.		
1. Roads and bridges ...	700	223
2. Buildings and offices ...	450	40
VIII. Cost of Departmental Cattle.		
3. Feed and keep of cattle ...	200	43
IX. Cost of Departmental Plant and Tools.		
2. For other purposes ...	200	...
X. Miscellaneous Charges.		
2. Law charges	...	5
3. Other charges	500	42
Total A, Conservancy and Works...	36,000	25,991
B ESTABLISHMENT.		
i. Salaries	7,740	7,914
ii. Travelling allowances ...	3,500	3,320
iii. Contingencies	1,000	454
Total B, Establishment ...	12,240	11,688
Total Expenditure.....	48,240	37,679

32. *Receipts.*—During the year, the original budget estimates were modified, and the regular estimates were put down at Rs. 76,600 or Rs. 7,400 less than the original. The alterations were.—"Head I.—1. (*a*) Timber and Bamboos" reduced to Rs. 18,000 from Rs. 30,400, or by Rs. 12,400; while I.—1 (*b*) was raised by Rs. 200 and IV.—3, by Rs. 4,800. The actual realizations shew an increase of Rs. 36,299, a decrease of Rs. 12,842 or a total *increase* of Rs. 23,457.

The increases were under—

1. Sandalwood, Rs. 31,053, estimated at fixed value of Rs. 320 per ton, sold at Rs. 551—3—2; in addition to which 13½ tons more than estimated were sold. The high prices proving the incentive to sell.
2. Minor forest produce Rs. 2,467 more than estimates; outstandings of former years under cardamoms accounting for most of this.
3. From other sources Rs. 2,491 more than estimates.
4. Small sums under various heads, Rs. 288.

The decreases were under—

1. Timber Rs. 11,439, as compared with original estimates, (if with regular estimates an *increase* of Rs. 961). The demand for timber though better than that of 1874—75 is still somewhat low.
2. Confiscated and drift wood less by Rs. 1,403; an outstanding which should have been recovered would have shewn an increase instead of a decrease.

A. Conservancy and Works.

33. *Expenditure.*—Here the actuals as compared with *original* estimates shew an increase of Rs. 48 and a decrease of Rs. 10,057 or a net decrease of Rs 10,009; (compared with regular estimates the total decrease is Rs. 3,008.)

The decreases were under.—

I. 1. (*a.*) Timber Rs. 5,132, but outstandings due by the Department on 31st March 1876 were Rs. 2,336, which should have been adjusted by the Assistant Conservator. The operations were less than anticipated.

I. 1. (*b.*) Rs. 145, less work.

I. 1. (*c.*) Rs. 51, less (sandalwood).

III. 3. Surveys, Rs. 270.

IV. & VII. Shew a decrease of Rs. 3,644. I have already in paras 9 and 12 spoken of the failure to protect the Anokadu forest from fire. Orders from the Government of India not to extend the planting operations but to turn to the care of existing forests, account for Rs. 2,202 of this decrease.

Under several other heads a total decrease, in fluctuating items of Rs. 767.

The *increases* are insignificant.

III. 1. Demarcation, Rs. 43.

IX. 2. Law Charges, Rs. 5 against a blank estimate.

B. Establishment.

34. A total decrease of Rs. 552, which calls for no detailed remark.

35. The financial results are now summarized as follows:—

	Rs.	
Realizations	1,07,457	
Deduct—		
Realized on account of transactions of former years	21,931	
Balance ..	85,526	
Add—		
Outstandings at close of the year	24,060	
Value of year's transactions	...	1,09,586
Disbursements	37,679	
Add—		
Amounts due for transactions during the year under review but not disbursed	2,336	
	40,015	
Deduct—		
Disbursed on account of previous years	498	
Real cost of the year's transactions ...	...	39,517
Balance.....		70,069
Add—		
Difference between value of stock at the commencement and close of 1875—76		5,233
Net Results of the year		75,302

or Rs. 39,542 over the originally estimated surplus

36. Besides the above, Rs. 5,200 worth of timber were given free to the Military authorities.

GENERAL REMARKS.

37. Mr. H. R. Ring was in charge of the Forest Division throughout the year. His office management was still far from what it should have been ; and I have already in paras 9 and 12 alluded to his failure in carrying out operations for protection of the Anekadu forest from fire, and the poor work in plantations. On the other hand the inspection of lands applied for for coffee plantation is a terrible interruption to all sorts of forest work and a great hindrance to progress. Sixty one plots were inspected, and though there has been in some cases great delay, still on an average each plot including the travelling down, the inspection, the valuation of trees, represents on two days, or in all 122 days lost to forest work proper, independently of the interruption to work by the monsoon rains. The proposals made to strengthen the superior Forest staff will leave one Forest Officer free to carry on the forest work proper, while another is employed to carry out forest work more intimately connected with the land revenue. This will end this unsatisfactory state of things.

38. Mr. Ring has shewn good work done in demarcation and fixing of survey stations.

39. In December 1875, B. Ramanna, Mutsaddi in the Assistant Conservator's Office, was convicted of having fraudulently altered, and of, forging registers and of embezzlement while officiating as Ranger. He was sentenced to 3 years' rigorous imprisonment and a fine of Rs. 200. T. Palangappa, a Head Watcher who was also implicated in the crime, was convicted and sentenced to six months' rigorous imprisonment.

40. Húnsúr Basavaiya, a timber merchant, sued the Department for Rs. 15,000, the Conservator having stopped the carrying out of an old contract entered into several years ago, on the ground of irregularities in the way it was worked. The decision of the Court was that the Forest Department should work the timber claimed out of the forest, and sell it at the cost of the plaintiff, the Government retaining one-fourth of the net proceeds. H. Basavaiya to be granted in timber an equivalent of Rs. 1,000 as costs and loss incurred.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

Government Series, No. 21.

COORG FOREST DEPARTMENT.

Annual Summary of Revenue and Expenditure for 1875—76.

Budget Heads.	Particulars.	Amount.			Remarks.
	Receipts.				
I.	Revenue from wood :—				
	1. Brought to Depôts :—				
	(*a*) Timber and bamboos	18,960	10	1	
	(*b*) Firewood and charcoal	1,969	13	4	
	(*c*) Sandalwood	56,653	7	2	
	3. From confiscated drift and waifwood ...	597	2	0	
II.	Revenue from minor produce:—				
	1. Grazing dues and sale of grass	83	2	0	
	2. Other minor produce	*26,466	9	11	*Cardamoms, 23,581 5 11 Minor produce, 2,885 4 0
IV.	Miscellaneous :—				
	1. From fines and forfeitures	31	4	0	
	2. From refunds to the Department	4	0	0	
	3. From other sources	2,691	4	9	
	Total Receipts.....	1,07,457	5	3	
	Expenditure.				
	A. Conservancy and Works.				
I.	Cost of timber operations:—				
	1. On wood brought to Depôt by Departmental Agency.				
	(*a*) Timber and bamboos	12,868	7	0	
	(*b*) Firewood and charcoal	1,655	0	0	
	(*c*) Sandalwood	3,949	2	0	
III.	Cost of forest organization.—				
	1. Demarcation lines and boundary pillars or marks..	2,743	2	11	
	3. Surveys	2,029	11	3	
IV.	Cost of the treatment and creation of forests.—				
	1. Natural forests.—				
	(*d*) Replacement or restoration of denuded areas ...	1,798	5	1	
	2. Artificial forests.—				
	(*e*) Improvement and conservation	594	8	0	
VII.	Works of utility for the development of forests.—				
	1. Roads and bridges	223	5	0	
	2. Buildings and offices	40	0	0	
VIII.	Cost of Departmental cattle.—				
	3. Feed and keep of cattle	43	2	0	
X.	Miscellaneous charges.—				
	2. Law charges	4	9	0	
	3. Other charges	42	0	0	
	Total A, Conservancy and Works.....	25,991	4	3	
	B. Establishment.				
I.	Salaries	7,913	14	10	
II.	Travelling allowances	3,320	5	11	
III.	Contingencies	453	12	6	
	Total B, Establishment... ..	11,688	1	3	
	Total Expenditure.....	37,679	5	6	

Conservator of Forests' Office,
Coorg,
Bangalore, 9*th June* 1876.

G. J. van SOMEREN, Captain,
Conservator of Forests, Coorg.

Dr. Government Series, No. 22. Cr.

COORG FOREST DEPARTMENT.

Annual Abstract Account of the Cash Transactions of the Forest Department for the year 1875—76.

Year.	Heads of Account.	Amount.			Year.	Heads of Account.	Amount.		
1875—76.	To Cash Balance on 1st April 1875.	5,466	4	4	1875—76.	By Expenditure of the Department...	37,679	5	6
	„ Revenue received	1,07,457	5	3		„ Remittances to State Treasuries.	1,07,457	5	3
	„ Remittances from State Treasuries	35,404	15	5		„ Refund of Advances	731	15	3
						„ Remissions of do ...	323	15	0
						„ Balance in hand on 31st March 1876	* 2,071	9	4
						„ Advances recoverable... ..	64	6	8
	Total Rs.....	1,48,328	9	0		Total Rs.....	1,48,328	9	0

*Besides the above the Assistant Conservator holds a permanent advance of Rs fifty only on account of Contingencies.

Government Series, No. 23.

COORG FOREST DEPARTMENT.

Annual Statement of Outstandings and Liabilities of the Department on account of Contractors and other Disbursers for the year 1875—76.

Division.	Departmental Debtor									Departmental Creditor.						Balance due.						Remarks.
	At the commencement of the year.			Recoveries in cash and value of supplies and work done during 1874-75.			At the close of the year.			At the commencement of the year.			Payments made during the year			At the close of the year.			To Department Outstanding.			By Department Liabilities.			
Coorg ...	498	7	0	26,548	11	6	27,047	2	6	5,466	4	4	23,652	7	6	29,118	11	10	2,071	9	4	...	.	..	Due to timber carting contractors.
	...	...	...	2,335	13	9	2,335	13	9	...	..	..	...	..	..	...	..	...	...	..	.	2,335	13	9	

Government Series, No. 28.

COORG FOREST DEPARTMENT.

Annual Account of Forest Revenue for 1875—76.

Receipts.	Amount.			Disbursements.	Amount.		
Amount of revenue realized in 1875—76.	1,07,457	5	3	Amount disbursed in 1875—76 ...	37,679	5	6
Deduct—				*Deduct—*			
Amount realized on account of previous years	21,931	5	11	Amount disbursed on account of transactions of previous year ...	498	7	0
Balance Rs.....	85,525	15	4	Balance Rs.....	37,180	14	6
Add—				*Add—*			
Outstandings at close of the year „ ...	24,059	12	8	Amount due for transactions during the year under review but not yet disbursed	2,335	13	9
Value of the year's transactions „ ...	1,09,585	12	0	Real cost of the year's transactions Rs.	39,516	12	3

Value of the year's transactions	1,09,585	12	0
Cost of the year's transactions	39,516	12	3
Balance.....	70,068	15	9
Add difference between the value of the stock at the commencement and close of the year...	5,233	0	0
Net Realizations of the year	75,301	15	9

Besides, the above Rs. 5,200 worth of wood was supplied free of charge to the Military Department

CONSERVATOR OF FORESTS' OFFICE,
COORG,
Bangalore, 24th July 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

COORG FOREST DEPARTMENT.

Stock Account of Quantities and Value of Timber and other Forest Produce on hand at the commencement and close of the year 1875—76.

Description.	In Depôt on 1st April 1875.		Add received during 1875—76.		Deduct issued or sold during 1875—76.					Remaining in Stock on 31st March 1876.		Remarks.
	Quantity.	Probable Value.	Quantity.	Probable Value.	Quantity.	Probable Value.	Amount realized.	Difference. Profit.	Difference. Loss.	Quantity.	Probable Value.	
Teak	401	5,213 0 0	399	5,187 0 0	324	4,212 0 0	7,607 0 6	3,395 0 6	... ...	476	6,188 0 0	
Do Poles ...	149	149 0 0	53	53 0 0	103	103 0 0	118 0 0	15 0 0	... ...	99	99 0 0	
Junglewood ...	949	7,592 0 0	1,727	13,816 0 0	1,035	8,280 0 0	6,356 7 6	... ...	1,923 8 6	1,641	13,128 0 0	
Do Poles ..	4,160	4,160 0 0	4,998	4,998 0 0	4,283	4,283 0 0	2,702 4 8	... ...	1,580 11 4	4,875	4,875 0 0	
Bamboos ...	149,745	2,995 0 0	156,941	3,138 0 0	164,762	3,295 0 0	5,308 14 1	2,013 14 1	... ...	141,924	2,838 0 0	
Firewood, (Cart-loads)	9	9 0 0	2,377	2,377 0 0	2,139	2,139 0 0	1,599 8 6	... ...	539 7 6	247	247 0 0	
Fire-sticks. ...	...	... ...	...	... ...	...	... ...	... ...	... ...	... ...	...	... ...	
Total.....	155,413	20,118 0 0	166,495	29,569 0 0	172,646	22,312 0 0	*23,692 3 3	5,423 14 7	4,043 11 4	149,262	27,375 0 0	
Good wood ...	31¾	10,160 0 0	83¾	26,800 0 0	90	28,800 0 0	51,368 15 2	22,568 15 2	... ...	25½	8,160 0 0	
Chips, &c. ...	¾	24 0 0	2¾	88 0 0	3½	112 0 0	168 12 0	56 12 0	... ...	...	... ...	
Total.....	32½	10,184 0 0	86½	26,888 0 0	93½	28,912 0 0	51,537 11 2	22,625 11 2	... ...	25½	8,160 0 0	
Grand Total...	155,445½	30,302 0 0	166,581½	56,457 0 0	172,739½	51,224 0 0	75,229 14 5	28,049 9 9	4,043 11 4	149,287½	35,535 0 0	

*Besides the above Rs. 524—2—10 were realized by sale of 6,009 fire sticks sold to the Anche Department.

CONSERVATOR OF FORESTS' OFFICE,
COORG,
Bangalore, 24th July 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

COORG FOREST DEPARTMENT.

Statement shewing the Number of Logs felled, sold and remaining for the year 1875—76.

Description	Remaining at close of 1874—75.	Felled during 1875—76.	Total.	Sold or issued during 1875—76.	Remaining at close of 1875—76.	Remarks.
Teak	401	399	800	324	476	
Do Poles ...	149	53	202	103	99	
Junglewood ...	949	1,727	2,676	1,035	1,641	
Do Poles ..	4,160	4,998	9,158	4,283	4,875	
Bamboos ...	149,745	156,941	306,686	164,762	141,924	
Firewood (Cart loads)...	9	2,377	2,386	2,139	247	
Firesticks (Number) ...	2,610	5,822	8,432	6,009	2,423	
Total.. ...	158,023	172,317	330,340	178,655	151,685	

COORG FOREST DEPARTMENT

Statement shewing the Amount expended on account of Timber, &c., received from the different Forests during 1875—76.

Description of Wood	Number of Logs.	Cubical contents.	Cost. Conservancy and working expenses.			Cost. Cost of Temporary Establishment.			Cost. Total.			Average cubical contents per log.			Average Cost per 100 cubic feet.			Remarks
Teak ...	399	8,983	2,137	2	0							22½	23	12	8			
Do Poles ...	53	..	27	14	2							..	..	8	5			Per pole
Junglewood ...	1,727	19,321	2,824	1	9							11	14	9	10			
Do Poles ...	4,998	...	1,344	6	2	3,659	9	0	14,523	7	0	...	...	4	4			Per pole
Bamboos ...	156,941	..	2,947	15	11							...	18	12	6			Per 1000 bamboos.
Firewood (Cart-loads)...	2,377	...	1,173	2	9							..	...	7	11			Per cart-load
Firesticks ..	5,822	...	409	3	3							..	...	1	1			Per stick.
Total.....	172,317	28,304	10,863	14	0	3,659	9	0	14,523	7	0	...	...	...	...			

COORG FOREST DEPARTMENT.

Statement shewing the Amount realized on account of the different Classes of Timber, &c., sold during 1875—76.

Description of wood.	No. of Logs sold	Cubical contents.	Amount realized.			Average cubical contents of Logs	Average Amount per Log.			Average Amount per 100 cubic ft.			
Teak	324	8,270	7,607	0	6	25½	23	7	7	91	15	8	
Do Poles ...	103	30	118	0	0	per pole.	1	2	4	114	9	0	Per 100 poles.
Junglewood ...	1,035	14,426	6,356	7	6	13½	6	2	3	44	1	0	
Do Poles ...	4,283	..	2,702	4	8	per pole.	0	10	1	63	1	6	Per 100 poles.
Bamboos	164,762	..	5,808	14	1		32	5	6	32	3	6	Per 1000 bamboos
Firewood (Cart-loads).	2,139	...	1,599	8	6	per Cart-load.	0	11	11	74	12	5	Per 100 cart-loads
Total......	172,646	22,726	23,692	3	8	...	...	..	...	...	..	..	

Besides the above Rs. 524—2—10 were realized by sale of 6,009 fire-sticks to the Ancho Department or at an average rate of one anna and four pies per stick

CONSERVATOR OF FORESTS' OFFICE,
COORG,
Bangalore, 24th July 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

COORG FOREST DEPARTMENT.

Statement shewing the Quantity of Sandalwood, collected and sold during the year 1875—76.

Description of wood.		Quantity in Tons.	Total Cost.			Average Cost per Ton.			Sales. Quantity in Tons.	Amount realized.			Average Amount per Ton.			Remarks.
Good Wood	Billets	69¾	3,949	2	0	45	10	6	74½	44,190	8	0	593	2	7	
	Roots	15¾							15½	7,178	7	2	463	2	0	
Chips, &c.		1							3½	168	12	0	48	3	5	
	Total.....	86½	3,949	2	0	45	10	6	93½	51,537	11	2	551	3	3	

CONSERVATOR OF FORESTS' OFFICE,
COORG,
Bangalore, 24*th July* 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

COORG FOREST DEPARTMENT.

Account showing the Expenditure incurred on account of Plantations in Coorg up to the close of the official year 1875—76.

Division.	Name of Plantation.	Previous area planted.	Area planted in 1874-75.	Area planted in 1875-76.	Total area planted.	Previous cost of formation and maintenance.	Cost of formation and maintenance on area planted in 1874—75.	Cost of formation and area planted in 1875-76.	Total cost of formation and maintenance on whole area planted.	Amount realized on crops in previous years.	Amount realized on crops in 1874—75.	Amount realized on crops in 1875—76.	Total amount realized on crops.	Total net cost of area planted, formation and maintenance.	In previous years.	In 1874—75.	Average cost per acre for formation in 1875-76.	Average cost per acre for formation and maintenance on whole area planted.
Coorg.	Karmad (Teak) ...	189	25	15	229	12,333 0 0	2,156 0 0	1,697 0 0	16,186 0 0	...	...	...	...	16,186 0 0	65 4 1	86 3 10	113 2 1	70 10 10
	Kutampolle do ...	152	...	...	152	5,952 0 0	603 0 0	403 0 0	6,958 0 0	...	...	...	...	6,958 0 0	39 2 7	...	...	45 12 5
	Karapur (Anekadu)	20	4	...	24	1,301 0 0	585 0 0	64 0 0	1,950 0 0	...	...	...	...	1,950 0 0	65 0 9	146 4 0	...	81 4 0
	Faddar Ane	50	...	...	50	361 0 0	77 0 0	...	438 0 0	...	...	...	...	438 0 0	7 3 6	...	...	8 12 1
	(Sundry)																	
	Gangavara do ...	15	...	...	15	318 0 0	337 0 0	228 0 0	883 0 0	...	...	...	...	883 0 0	21 3 2	...	...	58 13 10
	Total.....	426	29	15	470	20,265 0 0	3,758 0 0	2,392 0 0	26,415 0 0	...	...	...	...	26,415 0 0	...	...	...	...

CONSERVATOR OF FOREST'S' OFFICE,
COORG,
Bangalore, 24th July 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Coorg.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN THE

PROVINCE OF COORG,

FOR

1875—1876.

By CAPTAIN G. J. VAN SOMEREN,

CONSERVATOR OF FORESTS.

REVIEW BY THE CHIEF COMMISSIONER.

1. The Conservator of Forests submits the Report on the working of the Forest Department of the Coorg Province for 1875—76.

FIRST SECTION.

2. In the demarcation of the State reserves, fair progress has been made, and 88 miles of new lines opened up, against 48¾ in the preceding year. The other operations under this head embrace the upkeep of 122 miles of old lines, and the fixing of 1,831 survey stations. There has been a satisfactory reduction in the rateable cost of all these operations. The survey of these forests by the Survey Department has also progressed favorably.

THIRD SECTION.

3. The Conservator reports that nothing has been done towards carrying out measures for the protection of the State forests, and that the omission has not been satisfactorily explained by the Assistant Conservator. Mr. Ring has proved himself unable to cope with the work which has devolved on him, and though the demands upon his time may have been frequent and embarrassing, the Chief Commissioner is not satisfied that he has been as diligent and methodical in the disposal of business as he should have been.

FIFTH SECTION.

4. The sales of timber, though they fell short of the estimates in most particulars, were considerably in excess of the quantity sold in the previous year, and the realizations from this source amounted to Rs. 24,217 against Rs. 12,773 in 1874—75.

5. The maintenance of numerous small depôts has been found unsatisfactory, and the Chief Commissioner approves of the arrangements made by the Conservator to close, for the present, the smaller depôts. New depôts have been opened, however, at Mercara and Arkalgúd in the Hassan District. The re-opening of the depôt at Virajpet might be necessary in view of the demand likely to exist in South Coorg.

6. *Sandalwood.*—The sales of sandalwood, which have averaged Rs. 571 nearly per ton for good wood (billets and roots) and Rs. 551 for other kinds, have been favorable. following as they did the sales in Mysore.

FINANCIAL RESULTS.

7. The financial results of the year shew a net profit, after deducting expenditure under all heads, of Rs. 75,302.

8. The charges under head A. Conservancy and Works aggregated Rs. 25,991 against estimates to the amount of Rs. 36,000; the deficient outlay being chiefly in the items of I.—1 (*a*) Timber and Bamboos, and IV.—1 (*a*) Reboisement.

9. Under the head B. Establishment, the expenditure was Rs. 11,688, against a Budget sanction of Rs. 12.240.

GENERAL RESULTS.

10. The general results of the Forest administration in Coorg, as exhibited in this report, seem to the Chief Commissioner to indicate the necessity for strengthening the superior staff of the Department, in accordance with the proposals which have been recently submitted for the sanction of the Government of India. The Chief Commissioner is satisfied however that better results could have been shewn under more efficient management and closer supervision.

"By Order,"
T. CLARKE,
Offg. Secretary.

BANGALORE,
30th August 1876.

No. 228.

FROM

G. H. M. BATTEN, ESQ.,

Offg. Secretary to the Government of India,

To

THE CHIEF COMMISSIONER OF COORG.

Department of Revenue,
Agriculture, and Commerce.

Forests.

Calcutta, the 13th February 1877.

SIR,

I AM directed to acknowledge the receipt of your Officiating Secretary's letter No. 390—14, dated the 11th September last, forwarding the annual report of the Forest Department in Coorg for 1875-76, and to communicate the following observations and orders.

2. The Governor-General in Council agrees in your opinion that better results could have been shown under more efficient management and closer supervision. Your proposals for strengthening the superior staff of the Forest Department in Coorg received the sanction of the Government of India in September last, His Excellency in Council, therefore, hopes that a more favourable report may be received of the operations of the current year, and that Mr. H. R. Ring, the Officiating Assistant Conservator, will have earned a better character for efficiency. The report made of that officer's work in the past year is most unsatisfactory.

3. With respect to the boundaries of the reserves, it is satisfactory to find that, if the Conservator's statements are correctly understood, the boundary lines of only a single deciduous forest remain to be cleared. That forest, however, *viz.*, Nalkere, is a very large one, comprising 117 square miles, or nearly one-third of the aggregate area of the demarcated reserves of Coorg. The boundary lines of the evergreen forests have not yet been cleared. The aggregate length of cleared demarcation lines at the close of the year appears to have been 330 miles, of which, however, only 210 seem to have required any outlay on clearing and maintenance during the year.

4. The brief remarks given in paragraph 10 of the report regarding the present condition of 12 of the reserves are useful. It was fortunate that the fires which occurred last hot season did not cause much damage, but this, in no way, excuses the inattention of the Forest officers to the orders of the Government on this subject. Protection from fire is the first condition of forest improvement, and it is one of the most important duties of the Conservator to carry out strictly the instructions which have been issued to him for that object.

5. It is observed that all areas not fairly well stocked have been rightly excluded by the Conservator from the statements of the area of plantations. Consequently two plantations only, both of teak, are shewn therein, *viz.*, the Karmad block of 229 acres, which cost Rs. 70 per acre, and the Kutampolle block of 152 acres, which cost Rs. 45 per acre. It is much to be regretted that in three plantations which have been omitted in the statement there was indifferent success, and that in the sandal plantations particularly the work is reported to have been very unsatisfactory.

6. In the matter of plantations the attention of the Conservator should be directed to the adoption of expedients for diminishing the cost of these operations. It is not the wish of the Government of India to discourage the formation of plantations of teak, sandal and other useful trees, but it is obviously necessary to reduce considerably their cost. On this subject, as well as on questions of fire protection, Captain VanSomeren will do well to consult Captain Doveton, the Conservator of Forests in the Central Provinces.

7. The data recorded by the Conservator in paragraphs 17 to 26 of his report, regarding the yield of the forests and disposal of the timber, are not very clear. It is nowhere distinctly shewn what produce was brought from the reserved and what from the unreserved forests. In paragraph 22 it is stated that the small depôt scheme resulted in a gain of Rs. 2,391, but the charges on this account are not given. The receipts from the sales at the depôts were apparently Rs. 12,598.

8. The sandalwood collected amounted to 86 and the quantity sold to 93 tons. The Governor-General in Council accepts the Conservator's assurance that no growing wood was felled. The amount realized on this account was Rs. 56,653 against an outlay of Rs. 3,949. It is obvious that every effort must be made to increase the supply of so remunerative an article, and His Excellency in Council trusts that future reports will shew that steps have been taken to re-commence the cultivation of this valuable tree on a large scale.

9. The financial results of the year under review have been—

		Rs.	Rs.
Receipts		...	1,07,457
Charges	A	25,991	
	B	11,688	
			37,679
	Surplus		69,778

Of the charges for conservancy and works Rs. 18,562 were expended on the production of revenue and Rs. 7,429 only on the maintenance and improvement of the forests. Excluding sandalwood, the amount expended on departmental timber and wood operations was Rs. 14,523 against receipts of Rs. 21,000. As stated in the orders on last year's report, it does not appear to the Governor-General in Council that these operations in Coorg are very remunerative. Sandalwood and also cardamom, which alone yielded a revenue of Rs. 23,581, are clearly the chief sources of the surplus revenue from the Coorg forests at present. The statements appended to the report point to a conclusion different from the opinion just stated, but the figures in these statements may require correction, and until more precise data to the contrary are before the Government of India, His Excellency the Governor-General in Council is disposed to adhere to the opinion expressed in paragraph 4 of the orders on the budget estimate for 1876-77, *viz.*, that there seems to be no object at present in encouraging these timber operations, which leave a very small surplus and do not benefit the forests.

10. The Conservator should be informed that it is unnecessary in his annual administration report to enter into explanations of the differences between budget estimates and actual financial results, or to encumber it with figured statements which do not contribute to explain the nature and result of the work accomplished, or which are mere repetitions of the appended returns.

Captain VanSoméren's reports are capable of much improvement in respect of conciseness, completeness, and lucidity of arrangement. It is difficult to learn from them what work has actually been performed by the Forest Department in Coorg.

I have the honour to be,

SIR,

Your most obedient servant,

Offg. Secretary to the Government of India.

1877.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

FORESTS.

To

THE CHIEF COMMR. OF COORG.

No. 228.

Dated Calcutta, the 13th February 1877.

SUBJECT.

COMMUNICATES observations and orders on the Report of Forest Administration in Coorg for 1875-76.

Government Central Press.—No. 676, R., A., & C.—16-2 77 —460.

Half-yearly Reports of Forest operations in Ajmere and Mhairwara ending 30th September 1875 and 31st March 1876.

No. 1103S., dated Mount Aboo, 5th May 1876.

From—A. G. CROMMELIN, Esq., *Secretary to the Agent, Governor-General, and Chief Commissioner, P. W Department, Rajpootana,*

To—*The Secretary to the Government of India.*

I HAVE the honour, by desire of the Officiating Agent, Governor-General, and Chief Commissioner, to submit herewith copy of letter No. 307, dated 27th December 1875, from the Commissioner of Ajmere and Mhairwarra, together with the original half-yearly report on the Ajmere and Mhairwarra forest operations for half-year ending 30th September 1875, and to state that the progress reported therein appears to Mr. Lyall as pretty satisfactory.

No. 307, dated Camp Nusseerabad, 27th December 1875.

From—L. S. SAUNDERS, Esq., *Commissioner, Ajmere and Mhairwarra,*

To—*The Secretary to the Chief Commissioner, Ajmere.*

WITH reference to the correspondence ending with your No. 2885S., dated 11th November last, I have the honour to forward the 2nd half-yearly report on the Ajmere and Mhairwarra forests ending 30th September 1875, with my remarks on the margin, for orders of the Chief Commissioner, and I would inform you that there are no annual statements to accompany this report, as the annual account current and the summary of expenditure include the total expenditure during the year, and cannot, therefore, be furnished till the official year terminates on the 31st March 1876.

2. The work during the half-year has been satisfactory.

No. 394, dated 9th November 1875.

From—E. McA. MOIR, Esq., *Asst. Conservator of Forests, Ajmere and Mhairwarra,*

To—*The Commissioner of Ajmere and Mhairwarra.*

IN continuation of my No. 51, dated 27th April 1875, I have the honour to submit the half-yearly report ending 30th September, in compliance with orders contained in paragraph 5 of Government of India No. 198, dated 19th February 1875.

2. *Summary of last six months.*—The work of the last six months has tended to place the forest operations of Ajmere and Mhairwarra on a sound footing, and the department may be said to be now fairly established in this district, and to have emerged from the period of experimenting and uncertainty.

3. Estimates and rough working plans for all the tracts, plantations and nurseries have been submitted and sanctioned by the Chief Commissioner for the work to be done during the next five years, and forms of declaration for taking up two more tracts in the Ajmere district have been published in the local Gazette.

4. A complete set of forest rules, suited to the requirements of this district, have also been submitted, and received the sanction of the Chief Commissioner on 4th June 1875, after a few alterations which were deemed advisable. A copy of these rules as finally sanctioned will be found at the end of this report.

5. It is to be regretted that considerable delay has unfortunately occurred with respect to the printing of these rules, the forest regulation, and forms of declarations in proper vernacular, for, in accordance with the orders contained in section 3 of the forest regulation, the lumberdars of the villages whose lands are included in the different tracts are to receive a copy of the forest regulation and forms of declaration before the rules can be properly applied, and it is to be hoped that no more delay will occur in carrying out this condition.

After considerable delay, the Deputy Commissioner has now reported that these declarations have been sent out for delivery.

L. S. S., 27-12-75

6. During the last six months I was fortunate enough in obtaining three months' privilege leave, and whilst absent, Mahomed Anwur Khan conducted the ordinary work in a satisfactory manner. He was supplied with a programme of procedure previous to my departure for Europe, which has been followed in a careful manner.

7. On my return from leave, the final demarcation of the tracts which have been decided upon has been taken in hand, and the work is being proceeded with as rapidly as possible.

8. The following is a copy of the programme of the work to be executed during the current year, which has been duly approved of and sanctioned :—

I.—Demarcation and surveys of Delwara and Chang Beers, Beawar Parade Ground, and Sheekust Musjeed tract.

II.—Demarcation of the Nagh Pahar, Sreenuggur and Mohwa Beer tracts.

III.—Survey of Sreenuggur, Taraghur and Mohwa Beer tracts.

IV.—Final demarcation of the four forest tracts in Mhairwarra.

V.—Selection, demarcation and survey of one more forest tract in the Ajmere district, and two in the Mhairwarra district.

VI.—A statement is also to be prepared for each tract shewing the names of the proprietors of the different patches of cultivation, and other information in detail respecting privileges of grazing, grass-cutting, &c.

9. The rains have not been at all favourable for forest operations this season, there having been some most trying breaks with a scorching sun, one of which lasted for nearly a month.

A large proportion of this rain fell within a few days, and there were long and continued droughts, most inimical to young trees.
L. S. S., 27-12-75.

The average fall of rain registered this season throughout the districts of Ajmere and Mhairwarra has been about 35 inches, and with this quantity of rain it may, perhaps, be thought that the results of forest operations ought to be more favourable.

10. The actual amount of rain must not, however, in all cases be taken as indicative of the climate of a country with respect to moisture, so essential for the success of forest operations, for it may happen that certain places with a much less rainfall may be so situated that the prevailing winds blow over districts which enjoy a moist climate nearly all the year round.

In Ajmere and Mhairwarra the prevailing winds traverse the dry and parched-up deserts of Scinde, Marwar and Beekaneer previous to their reaching the districts of Ajmere and Mhairwarra.

11. I shall now proceed to sketch shortly the different works undertaken during the past rains which have been regulated principally in accordance with the principles approved of in Government of India No. 198, dated 19th February 1875, and again in Government of India No. 963, dated 30th August 1875.

12. *Ajmere District—Nagh Pahar, Mohwa Beer and Taraghur Hill tracts.*—A great improvement on the natural growth of these tracts is noticeable, and the trees formerly planted have greatly benefited by the rains.

About 80,000 of the pits formerly dug at these tracts have again been re-sown for the third time with the hardiest kinds of indigenous tree seeds, and it is hoped that more success will attend the operation than has been formerly met with.

13. The first of these tracts only has been taken up under the forest regulation, the declaration for the Mohwa Beer tract not having been approved of by the Chief Commissioner, and that for the Taraghur tract having been detained on account of the area not having been ascertained either from the Settlement Department, or the Topographical Surveyors.

14. Planting operations at these tracts have been confined to the filling up of empty pits in which the trees had failed. The trees planted at the Nagh Pahar were principally mango, at the Mohwa Beer the "chir" (*Pongamia glabra*), and at the Taraghur tract the sheesum; the nature of the soil and exposure at these different tracts having been found most suitable for these trees.

15. Broadcast sowing with indigenous tree seeds has again been tried at each of these tracts; also sowing neem seeds under the shelter of thor bushes.

Seeds were only sown where a certain amount of shelter was to be found, so that the area cannot be given exactly.

16. The grass has been sold at the Nagh Pahar and Mohwa Beer tracts, and the villagers of Indurkote, Boraj, &c., have exercised their right of grass-cutting in the Taraghur tract since the 10th October 1875.

17. A new system of sowing has been tried at the Taraghur tract on a small scale, known under the name of the method of scooped-out hollow places. The lines have been cut along the edge of the hill three feet wide as level as possible, and situated 15 feet apart.

The earth from the cutting has been heaped up so as to form a small embankment, and thus catch a certain amount of water.

18. The seeds have three chances, *viz.*, on the embankment, on the level part, and in the drain; but the experiment has not succeeded as well as anticipated, the long break in the rains during August and September having killed many of the plants before they had time to establish themselves.

19. *Sreenuggur and Beer tract.*—The form of declaration having been published for taking up this tract, possession was assumed in July last. The final demarcation is being postponed pending sanction to the arrangements made in my No. 237, dated 24th August, which were to the effect that certain privileges for grazing cattle (excluding camels and goats) should be allowed as a temporary measure in the central part of the tract, owing to the limited space the inhabitants of Sreenuggur possess for grazing.

This matter will, I hope, be shortly disposed of on the spot.
L. S. S., 27-12-75.

20. It was further proposed that the hill ranges only which are the most important to re-forest first should be strictly conserved, and after the scrub jungle begins to recover, portions of the intermediate land would be strictly conserved and sown in rotation. By this arrangement the inconvenience of prohibiting grazing suddenly over a large area will be mitigated to a great extent, and the object in view accomplished, though more slowly; but the villagers concerned of course object to any arrangement whatsoever, as nothing less than the total abandonment of the tract would meet with their approval.

21. Some broadcast and thor bush sowing has been done at this tract on a small scale as an experiment. About 35 maunds of neem, babool, khejra, orinj and other indigenous seeds have been sown, but the result has not been so satisfactory as at other tracts, there being little or no shelter yet on the hill-sides to protect the young plants after the seeds germinated.

22. The general result tends to strengthen the former opinion that grass and scrub of any kind must first be allowed to reach a certain height before broadcast sowing will meet with any success.

23. An estimate for the proposed expenditure on this tract during the next five years will be submitted as soon as a detailed examination of the tract has been made and the manner of demarcation decided upon.

24. *Hazaree Bagh and Nachun Bao.*—In accordance with orders contained in your No. 162 of 19th June last, these tracts have been returned to the District Committee, the establishment dismissed, and expenditure discontinued.

The natural growth on the Hazaree Bagh tract has improved wonderfully, but the sowing and planting operations have not been a success.

25. *Sheekust Musjeed tract.*—This tract has now been finally demarcated, and a form of declaration has been prepared as directed.

The whole of the hilly part of this tract, comprising an area of about 15 acres, was sown broadcast with a mixture of indigenous tree seeds, and the result has been encouraging, a large number of young plants having been found by me under the thor bushes and hidden in the grass, all of which were in a flourishing state.

26. Parts of this tract were sown broadcast last season without any apparent result, and the success of the experiment this season can only be attributed to the increased shelter afforded by grass and scrub, also the seeds having been sown at a lucky part of the rains.

27. *Nusseerabad District.*—In accordance with orders contained in your No. 162, dated 19th June, the plantation in the neighbourhood of Nusseerabad was returned to the Cantonment Committee on the 1st October, the establishment dismissed, and the accounts closed.

28. The following is a statement of the trees in the plantation and nursery when made over:—

Trees planted during 1873-74 and nearly established	5,014
Trees planted out in 1875	921
Number of trees of various kinds in the nursery now ready for planting out	17,463

29. During the past rains all empty pits were re-planted with strong nursery plants, and various blank spaces were re-sown with kair, babool and other seeds.

30. Besides the planted trees, an immense number of kair, babool, neem and other indigenous trees are now to be found all over the plantation.

These plants are mostly the result of former years' sowing operations, and, after lingering on for one or two years, have suddenly shot ahead and are now nearly established.

31. This points to the fact that, in executing "reboisement" operations, or forming plantations in this district, it must not be expected to advance too rapidly, and tracts which are to be operated upon must first be carefully conserved in order to get up shelter, the great essential of success in a climate like that of Ajmere.

32. The total cost of this plantation up to the date when it was returned to the Cantonment Committee has been Rs. 5,468-6-7, not including general charges, or about Rs. 50-5-0 per acre, which is not excessive in comparison with the cost of other plantations.

33. In concluding my remarks on this tract I wish to place on record that the forest operations have not been a failure, and I am persuaded that the plantation would have turned out a complete success, as far as the establishing of a belt of protection for the cantonment is concerned, had sufficient time been given to allow the tract to profit by rest, and the whole operation would not have cost more than many other plantations formed by the Forest Department in other parts of India.

The land is very poor, and I am not altogether as sanguine as Assistant Conservator on this point.
L. S. S., 27-12-75.

34. However, as the Cantonment Committee did not stick to their original agreement, which was to the effect that an area of 1,000 acres at least was to be made over, they have got themselves to blame for the incomplete condition in which the plantation has been returned to them.

35. *Court of Wards' Estates—Shoukla tract.*—About 100 acres have been sown at this tract, which completes the sowing of the whole area of 300 acres.

The sowing has been done by the neighbouring villagers, who have done so on the condition of their being allowed to cultivate a crop of jowar and bajra along with the trees, and a reward of 14 annas per acre is to be given if the land is ploughed up properly and the seeds sown early in the rains.

36. A number of small embankments have been constructed across the line of drainage, and an addition of 6,690 feet has been made to the fencing.

The whole of this tract having now been sown and the fencing nearly completed, operations will be confined in future to its strict conservancy, and expenditure limited as much as possible.

37. *Goella Plantation.*—The area sown this season has been about 100 acres, which now makes a total area of 254 acres.

The same arrangement with respect to the sowing has been made as at the Shoukla tract, and a good crop of various kinds of trees has been the result; but immense damage has been done by the long break in the rains formerly referred to.

38. A regular system of embankments across the line of drainage has been commenced at this tract, so as to allow none of the water that falls on a certain area to escape.

This method has been resorted to after carefully considering the conditions under which success can be ensured on land of this nature; but operations have been considerably restricted

on account of the want of funds, there only being Rs. 500 sanctioned for the current year's work.

39. An addition of 7,560 feet has been made to the fencing of this tract, and the sale of the grass on that portion which has not yet been sown has brought in a revenue of Rs. 70.

40. *Peesangun or Jaitgurh tract.*—During the last rains an area of about 75 acres has been ploughed up and sown, and about 10 maunds of various kinds of seed have been sown on the hill-sides, both broadcast and in the thor bushes.

41. The conservancy of this tract has turned out on the whole a success, and a vigorous growth of indigenous trees and shrubs has sprung up all over the tract, even on parts which looked utterly hopeless when the tract was first taken up.

42. *Mhairwarra District.*—The forms of declaration and estimates for these tracts having been sanctioned, the final demarcation is being proceeded with as rapidly as possible.

All the main boundary pillars are now being constructed in masonry, and slab stones are to be erected in the intermediate spaces where required. Lines of not less than 10 feet broad are being cut where necessary between the pillars, and numbers are to be painted or carved on each pillar. It is also intended to make a new survey of the boundary marks and fix the position of each with respect to the magnetic north.

43. A number of patches and blank spaces, comprising an area of about 96, acres have been sown at these tracts during last rains, also about 7,000 carefully dug pits along the edges of nullas and in other suitable spots.

Besides the above sowings, about 34 maunds of seed, principally neem, has been sown in selected places, and under the shelter of thor bushes.

44. In compliance with the wishes of the Chief Commissioner, strict orders have been given to the forest rangers not to interfere with any of the patches of cultivation situated within these tracts except in accordance with the arrangements sanctioned in Rule XIIC of the forest bye-laws.

45. I personally inspected two of these tracts, the Chang and the Shoepoora, towards the end of the rains, and a decided improvement was discernible, especially in the Chang tract, which is now almost impenetrable.

46. *Fire protection.*—During the last hot weather, four conflagrations unfortunately occurred in the Mhairwarra jungles, three at the Burakhan or Todgurh tract (Forest No. 4), and one at the Shoepoora tract (Forest No. 2). Two of these originated through the carelessness of persons carrying fire in the long grass, and the other two came over the boundary from Marwar.

No fires occurred this season in the Chang or Beleawas tracts, nor in any of the tracts in the Ajmere district.

47. Special precautions are being taken this season, as far as funds will permit, to prevent the re-occurrence of similar accidents, by constructing carefully cleaned lines, and it is hoped that these precautions, in addition to the responsibility which the new rules impose on the neighbouring villagers, will be effective in preventing further conflagration.

This is doubtless a most important point, and it will not be lost sight of.
L. S. S., 27-12-75.

48. It is, however, necessary to observe that, with respect to fire protection in tracts where the greater number of the trees are pretty large, some account must be taken of the cost of effectually protecting the jungle, and some estimate formed of the actual damage done by the outbreak of an occasional fire, which, after all, as I have before explained, is generally the result of an accident in this part of India.

49. If, on the one hand, the expenditure is to be beyond the bounds of reasonable limits, and on the other the damage done by an occasional outbreak trifling, then I venture to remark that, under the circumstances, the expenditure should be curtailed as much as possible.

50. From the above remarks I trust it will not be inferred that I am an advocate of the non-suppression of fires; on the contrary, I am persuaded that the exclusion of fires is the most important duty the Forest Department has to perform, and more especially where the forests are valuable, such as those of teak or sâl; but in the case of Ajmere and Mhairwarra, where fires are not annual occurrences, and where the so-called forests at the best are mere scrub jungles, I think the cost must regulate the extent of protection.

51. In the case of tracts where there are only young trees, the case, of course, stands different, for it is evident that all the young plants will be burned with the grass, and from these tracts fires must be rigorously excluded at least until the trees get above their most damaging influence.

52. *Delwara and Chang Beers—Beawar Parade Nursery.*—All these tracts have now been finally demarcated and surveyed. The boundary pillars bear serial numbers cut on the stones in large letters.

The necessary forms of declaration for taking up these tracts under the forest regulation will be submitted immediately.

53. Considerable improvements have been made on the Beawar nursery, and the young trees are now subject to a regular treatment of root shortening and transplanting previous to leaving the nursery.

54. *Nurseries in the neighbourhood of Ajmere.*—According to the orders contained in your No. 162, dated 19th June, the operations in these nurseries are being conducted with the object of transplanting all the trees to one main nursery, and the selection of a suitable site is being kept in mind.

District roads.—The completion of 30 miles of road avenues has now been accomplished, 11 miles having been planted during the past rains.

Most of the trees formerly planted are flourishing, but a few which had failed or had met with accidents had to be renewed.

FOREST BYE-LAWS.

UNDER SECTION 9 OF THE AJMERE FOREST REGULATION I OF 1874.

Sanctioned by Chief Commissioner in his Secretary's letter No. 1505 S., *dated 4th June* 1875, *and published in the Rajpootana Official Gazette of* 19*th June* 1875.

I. The limits of all State forests shall be indicated by conspicuous boundaries. The pillars shall be erected and maintained by the Forest Department; village boundary pillars falling within the limits of any State forests shall be maintained as formerly by the villagers.

II. Acts prohibited in State Forests:

(1). The following acts are prohibited:—

a. Breaking up waste land for cultivation without permission of the Forest officer.

b. Setting fire to grass or negligently permitting fire to extend to a State forest.

c. Setting fire to brushwood, trees, or stumps of trees.

d. Lopping, breaking, or otherwise injuring growing trees or bushes.

e. Removing soil or dead leaves from under trees.

f. Felling standing trees.

g. Cutting young trees under any circumstances.

h. Collecting fallen wood of any kind without permission of the Forest officer.

i. Collecting gums, resins, honey, wax, or other minor forest produce.

j. Carrying or kindling fire.

k. Carrying any implement to cut wood, except when it is carried in pursuance of a permit to cut wood.

l. Digging or quarrying for stones, lime, or kunkur without permit.

m. Grazing cattle without permit.

n. Cutting grass otherwise than is provided for in section 5 of the Forest Regulation.

(2). Any person who shall commit a breach of this rule shall be punished, on conviction before a Magistrate, with a fine not exceeding, for the first offence Rs. 50, and for the second or any subsequent offence Rs. 100. This punishment is to be in addition to any other consequences that would ensue from such breach.

III. *Responsibilities of Zemindars.*—It shall be the duty of all zemindars, whose habitation is not more than three miles from the State forest, to render aid in extinguishing forest fires.

IV. The zemindars of any village within three miles of a State forest are individually and collectively responsible for rendering aid towards preventing or extinguishing fires in a State forest.

V. If any person, whose duty it is under Rules III and IV to render aid in preventing or extinguishing forest fires, refuses or neglects to render reasonable aid on being required to do so by a Forest officer, the person shall be liable, on conviction before a Magistrate of the first or second class, to a fine not exceeding for the first offence Rs. 50, and for the second or any subsequent offence Rs. 100.

VI. *Powers of Forest Department.*—Forest officers not below the rank of jemadar shall have the power to confiscate any wood-cutting instruments carried by any person within these forests, unless it is carried in pursuance of a permit to cut wood.

VII. Any Forest official may arrest any person found in the act of doing the things prohibited in clauses (*b*), (*c*), (*d*), (*g*), (*i*), (*j*) of Rule II.

The person arrested may be made over to the zemindar of his village, provided that security to the value of Rs. 100 is given for his appearance.

In default of security, he should be conducted without delay before the nearest Magistrate.

VIII. Any Forest officer not below the rank of a jemadar may arrest any person found in the act of doing any of the things prohibited under Rule II (except under clause *a.*) if the arrest of the offender appears necessary to prevent his evasion of the penalty attached to breach of this rule.

IX. All articles confiscated shall be made over for disposal to the Deputy Commissioner.

X. *Cattle trespass.*—All cattle found straying or unlawfully grazing in any State forest may be seized by any Forest official, and when so seized shall be driven forthwith to the nearest pound.

(*a.*) When a right of way through the State forests is maintained, it shall be held to protect from seizure all cattle lawfully driven along the road or tract indicated, even though they stray into the forest, so long as the driver uses reasonable diligence to prevent them from straying, and to drive back such as stray.

XI. *Revenue*, (*a*.)—The revenue from State forests shall be divided in proportion to the area of land belonging to each village in the tract entitled to share under section 6 of the regulation, and irrespective of where wood or other produce may have been cut or obtained.

(*b*.) The Forest Department shall, from time to time, remit the sums due to the zemindars to the Deputy Commissioner (through the Commissioner), who shall specify the amount due to each village.

XII. Rules for grazing in State forests :

(*a*.) The grazing shall be for a defined area and specified period, and under a pass stating the number of cattle admitted to graze.

(*b*.) Application shall be made to the Forest officer by the lumberdar or patail of the village requiring grazing one month before the date required, containing a statement of the number of cattle belonging to the village, and the number for which a pass is required. Any cattle found grazing in excess of those specified in the pass shall be charged at such punitive rate as the Chief Commissioner may, from time to time, fix by notification in the Gazette.

(*c*.) The owners of all cultivated land within the boundaries of State forests shall only be entitled to pass into the forests such cattle as are *bonâ fide* required for ploughing or other agricultural purposes.

Grazing for the animals admitted to the forest shall, as far as possible, be allowed within forest limits.

XIII. All fines levied under these rules shall be credited to the Forest Department.

No. 1490S., dated Mount Aboo, 15th June 1876.

From—W. A. Crommelin, Esq., *Secy. to Agent, Governor-General, and Chief Commr., Rajpootana, P. W. Department.*

To—*The Secretary to the Government of India.*

I have the honour, by desire of the Officiating Chief Commissioner, to submit herewith copy of letter No. 116, dated 15th ultimo, from the Commissioner of Ajmere and Mhairwarra, together with the original half-yearly report on the Ajmere and Mhairwarra forest operations for the half-year ending 31st March 1876, and to state that this report is satisfactory, and describes good progress judiciously made.

2. I am to state that the figures of the returns* accompanying this report have not been verified by the Comptroller-General of Accounts, but by the Conservator of Forests, North-Western Provinces. A separate communication on this subject has been addressed to you in this Office No. 1487S., dated 14th instant.

* 1. Annual account, 1875-76.
2. Summary of the receipts and expenditure during the year ending 31st March 1876.

No. 116, dated Ajmere, 15th May 1876.

From—L. S. Saunders, Esq., *Commissioner, Ajmere and Mhairwarra,*

To—*The Secy. to the Chief Commissioner, Ajmere, Public Works Department.*

In forwarding a copy of the forest half-yearly report ending 31st March 1876, with my remarks on the margin, I have the honour to forward a copy of the Assistant Conservator of Forests' letter No. 101, dated 6th May, for the orders of the Chief Commissioner.

I think it should be definitely decided who is to verify the figures of the Forest Department in future.

No. 101, dated 6th May 1876.

From—E. McA. Moir, Esq., *Asst. Conservator of Forests, Ajmere and Mhairwarra,*

To—*The Commissioner of Ajmere and Mhairwarra.*

I have the honour to submit the half-yearly report ending 31st March 1876, along with the annual accounts and statements ordered in paragraph 5 of Government of India No. 198, dated 19th February 1875.

2. *Summary of the last six months.*—During the last six months the Assistant and Sub-Assistant Conservators have been almost entirely occupied in carrying out the final demarcation of all the forest tracts already taken up under the forest regulation.

3. The fencing of the different tracts has also been pushed on as far as funds would permit, and most of the places where the inroads of cattle have been found most troublesome and frequent have been enclosed in as cheap a manner as possible.

4. All the work entered in the half-yearly programme detailed in paragraph 8 of last report has been duly executed, with the exception of Nos. V and VI, which are, however, being carried out at present, and will probably be completed during the next two or three months.

5. The execution of Part V of the programme, *viz.*, the demarcation and survey of three more forest tracts, has unfortunately been delayed owing to the absence of orders on the subject, which were, however, asked for in November.

This has been since taken in hand, and will be shortly completed.
L. S. S., 11-5-76.

These, however, have now been received, and it is expected that the three new tracts will be demarcated, surveyed and taken up under the forest regulation within the next few months.

6. The execution of Part VI of the programme is being attended to, and the statement of rights for each tract will be ready shortly.

7. It must, however, be remarked, that it will not be of much practical advantage, in the case of the forest tracts of Ajmere and Mhairwarra, to incur any great expenditure in making out these lists, for the simple reason that the future policy with respect to these tracts will probably be to give them back to their owners, subject to certain restrictions, as soon as the scrub jungle has grown up again; and the terms of the forest regulation also define in a general way the rights invested in the neighbouring inhabitants.

8. *Demarcation work.*—The following is a list of the different tracts completely demarcated during the last six months:—

Name of tract.	Length of boundary demarcated. Miles.
Todgurh tract, Mhairwarra	40
Beleawas „ „	6
Shoepoorah „ „	12
Chang „ „	10
Nagh Pahar tract, Ajmere	10
Taragurh „ „	9
Mohwa Beer and Madar Hill tract, Ajmere	10
Sreenuggur and Beer tract, Ajmere	18
Delwara and Chang Beers, Shekust Musjeed tract and Parade-ground, Beawar	.6
New tracts temporarily demarcated.	
Borwa and Kotra tract, Mhairwarra	16
Anuspahar tract, Mhairwarra	8
Total ...	145

9. Some of these tracts have been demarcated by means of masonry boundary pillars, and for the demarcation of others, slab stones only, which are plentiful in the district, have been employed.

10. The pillars in all cases are situated within easy sight of each other, and where the jungle is thick, demarcation lines from one pillar to another have been cleared, so that there can be no mistake about the boundaries.

11. The pillars have also been numbered either with paint or by means of figures cut into the stone, which renders the demarcation work most complete, and renders mistakes almost impossible.

12. The plan of painting the tops of the pillars with red paint, as well as numbering them with the same colour, has also been adopted as an additional safe-guard, as this colour to a certain extent renders them sacred in the eyes of many of the neighbouring villagers.

The demarcation has been very well and successfully carried out, even if red paint be not looked on as sacred.
L. S. S., 11-5-76.

13. *Ajmere District, Nagh Pahar, Mohwa Beer and Taragurh Hill tracts.*—The usual operations have been carried out at these tracts, but more attention is now being paid to strict conservancy than to any other forest operation.

14. The frost was very slight this season, so that little or no damage was done; but the usual precautions were, of course, taken for protecting the trees.

15. The fencing work of the first of these tracts has been proceeded with as far as funds would permit, and a total length of 145 chains, generally of cactus fence, has been constructed. The completion of the fencing of this tract will probably be accomplished within the next two or three months.

16. At the Taragurh tract the following works have been carried out:—

1*st.*—The construction of a small nursery situated well above the highest level of the proposed tank.

2*nd.*—The completion of the fencing of the tract by means of two short lengths of stone fence.

3*rd.*—The construction of 142 chains of inspection path, which now renders all parts of the tract accessible.

4*th.*—A few extra pits have also been dug in a suitable place for mango planting, and the trees already planted have been maintained and are flourishing.

5*th.*—The usual fire lines have been constructed, also a small hut in the Emli-Kund for the use of the rangers whilst visiting that part of the tract.

17. The grass-cutting right was exercised as usual by the neighbouring villagers, and the question concerning the land belonging to this tract bought by the Ajmere Mission has now been finally settled.

18. *Sreenuggur and Beer tracts.*—Owing to certain complaints made by the villagers of Sreenuggur to the effect that too much land had been taken up for forest purposes in the neighbourhood of their village, a portion of the tract had to be re-demarcated, after a careful

examination into the matter had been made by the Deputy Commissioner and Assistant Conservator of Forests.

19. The arrangement finally agreed to is, that all the steep hill ranges forming the catchment basin of the neighbouring tanks are to be strictly conserved, and a certain portion of the tract, the re-foresting of which is not of such immediate importance from a climatic point of view, is to be open for grazing cattle only during eight months of the year.

This arrangement has quite removed the objection raised to the acquisition of this tract as a State forest.
L. S. S.

20. A length of 78 chains of cactus fence has been constructed, and a "chowkey" for the use of the rangers in charge is being built.

21. *Forest plots in estates under the Court of Wards.*—There is nothing particular to report concerning the Shoukla and Goella plots, as no funds have been available for any further forest operations.

At the Peesangun tract a length of about 48 chains of fence has been constructed, which nearly completes the fencing of this tract.

22. *Mhairwarra District.*—The principal operations executed at the different tracts in the Mhairwarra District are as follow:—

1*st.*—The construction of about 227 chains of fence at the Todgurh tract.

2*nd.*—The construction of 98 chains of fence at the Shoepoorah tract.

3*rd.*—The re-roofing and constructing in a permanent manner 14 rangers' huts or chowkies at different parts of these tracts.

4*th.*—The construction of about 1,628 chains of fire lines at the Todgurh and Beleawas tracts.

23. In addition to the above, about 407 chains of fencing have been constructed at the Delwara and Chang Beers, which nearly completes the enclosing of these tracts.

24. *District road planting.*—The trees already planted have been carefully protected from frost and cattle, and are flourishing, but no extension of the avenues has been made owing to the want of funds.

25. *Survey of forest tracts.*—The survey of the four large forest tracts in Ajmere and the four in the Mhairwarra district has been carefully executed by the Topographical Surveyors, and the boundaries entered on the new maps. Great credit is due to Mr. Leach, the Superintendent of the Survey, for the expeditious manner in which this work has been accomplished.

Lieutenant Leach, R.E., was most obliging in carrying out these surveys rapidly and with considerable inconvenience to himself.
L. S. S., 15-5-76.

26. *Fire protection.*—Special precautions have been taken this year to prevent the outbreak of fire in the various forest tracts; also explicit instructions and warnings have been given to the rangers in charge as to the line of action to be pursued in the case of conflagrations occurring.

27. In the Todgurh tract, where fires have formerly occurred, a complete system of fire lines has been constructed at a cost of Rs. 544-14-9, and six extra chowkeedars have also been entertained since the beginning of the hot season.

28. A large number of leather fire flaps have also been placed in readiness at different parts of these tracts for extinguishing the flames, as it frequently happens that when the villagers arrive to render assistance in putting out a conflagration, suitable branches for beating out the flames are sometimes not available where required, and a great deal of time and labour is expended, all to very little purpose.

29. Only one fire has occurred up to the present, which was, however, promptly extinguished, and the persons through whose carelessness it occurred summoned before the Assistant Commissioner under Rule II (*b*) of the Forest Bye-Laws.

This is satisfactory, as it has been a particularly dry season owing to absence of winter rains.
L. S. S., 15-5-76.

30. The case was, however, dismissed after the persons concerned had been severely warned; but in connexion with the same conflagration the zemindars of two neighbouring villages were fined Rs. 40 each under Forest Bye-Law No. V, for having neglected to render reasonable aid in extinguishing the fire when called upon to do so by the Forest officer.

31. *Forest Regulation.*—All the remaining conditions of paragraphs 2, 3 and 8 of the Ajmere Forest Regulation respecting the classment of the protective establishment into different grades, the delivering of Hindee copies of forms of declaration, &c., to the lumberdars, and the notification of the boundaries of the different tracts, have now been complied with.

32. Respecting the carrying out of the second of these conditions, it must be observed that the general effect on the villagers concerned is much more satisfactory, as they now see exactly the extent to which forest conservancy is to be carried, and it is to be regretted that this condition of the forest regulation was not attended to sooner.

This condition was for a time overlooked by the Deputy Commissioner accidentally, but has since been carried out.
L. S. S., 15-5-76.

33. *Establishment.*—Mahomed Anwur Khan, Sub-Assistant Conservator, has worked well and given satisfaction, as far as his state of health has permitted.

The office establishment has also performed its duties in a creditable and expeditious manner.

34. The conduct of the subordinate protective establishment has been on the whole good, with the exception of two cases, in which four of the subordinate forest rangers were concerned, one for illegal sale of forest produce, and the other for extortion, in both of which cases con-

victions have been obtained, two men being sentenced to one month's imprisonment with Rs. 15 fine, and the other two to Rs. 15 and Rs. 10 fine, respectively; which punishments, it is to be hoped, will act as a warning to the rest of the establishment.

35. A strong and serviceable dress, consisting of a dark-green coat, a red and black puggree and a pair of leather gaiters, has been supplied to each of the jemadars and rangers in charge of forest tracts, the cost of which is to be defrayed from their pay; a slight distinction having been made between the jemadars and rangers on account of the different functions they are charged to perform.

36. *Forest prosecutions.*—A list of cases tried under the Forest Bye-laws and others connected with forest affairs will be found at the end of this report.

37. Out of the 18 cases reported, it will be observed that 9 convictions have been obtained, 7 are pending, and 2 have been dismissed.

38. These cases are called summary by the Deputy Commissioner, and an arrangement has been made, so that all forest cases are to be disposed of on certain fixed dates; but the arrangement has not been found to work well up to the present, and the above statement will shew that the cases have not been disposed of in a very summary manner.

A copy of this will be sent to Deputy Commissioner, and some arrangement made for disposing of these cases more speedily.
L. S. S., 15-5-76.

39. *Financial results.*—In compliance with instructions contained in Government of India No. 198, the usual statements and accounts are appended, which consist of annual summary of receipts and charges, annual account current, and detailed statement of charges incurred on each reserve, plantation, or nursery.

40. *Annual summary of revenue and expenditure.*—From the accompanying statement it will be seen that the total expenditure under A and B during the year has amounted to Rs. 27,346-1-10, which gives an increase of Rs. 779-9-2 over last year's expenditure.

41. The sanctioned budget allotment for the year amounted to Rs. 29,525, so that an actual saving of Rs. 2,178-14-2 has, therefore, been effected.

42. The amount of revenue realized has been trifling, but there are several items still outstanding which, had they been realized within the year, would have brought the total considerably over the estimated amount.

43. *Total expenditure and revenue during* 1875-76.—The accompanying statement A. shews the total expenditure incurred for forest purposes, including district, nazul, &c., also the total revenue realized from all sources during the year.

The revenue realized is considerably less than last year, owing to the fact that the mango crop altogether failed, which has caused considerable loss to the district fund.

44. *Detailed statement of charges.*—This statement has been drawn up in the same form as last year, and an abstract has been added which shews in one sheet the total expenditure incurred on each forest reserve, experimental plantation and nursery, up to the end of 1875-76.

45. *Scarcity of timber in the Ajmere District.*—Owing to the extensive public works going on in the district, the scarcity of wood and timber for fuel and agricultural purposes seems to be on the increase, especially in the Ajmere district, judging from the enhanced price of wood and the complaints of zemindars and others.

46. The kind of tree best suited to meet the general demands is undoubtedly the babool (*Acacia Arabica*); but, as before explained, the nature of the land taken up for forest purposes is, with a few exceptions, altogether unsuitable for growing this tree, which can only be cultivated with profit in good land.

47. This tree is principally found growing on bunds of tanks and scattered over fields and other good lands, where, on account of the very slight shade, it does little or no harm to the crops.

48. A plentiful supply of firewood might be obtained from the forest tracts in the Mhairwarra district, but, unfortunately, these tracts are situated at such a distance from the market that the cost of carriage renders the proposal altogether prohibitory.

49. Under the circumstances, therefore, it is evident that the demand must be met in the Ajmere district at least from lands not under the Forest Department, and immediate steps taken to encourage the growth of timber on arable lands belonging to the village communities.

50. All that is necessary with respect to the cultivation of babool on such lands is to sow a few seeds, which are generally obtainable in each village, along with the crops, and, if possible, protect the young plants for one or two years from cattle; but even if they are not protected, some will be certain to escape, which, in a few years, would soon grow out of all danger, and the lower branches might be lopped if they approached too near the crops.

51. This proposal can only, of course, be carried out through the influence and energy of the district officers; and as the Forest officer in Ajmere will shortly be under the direct orders of the Deputy Commissioner, the suggestion might be carried into effect with less difficulty than at first imagined.

Much may, doubtless, be done in this way, and no opportunity will be lost.
L. S. S., 15-5-76.

52. The patails or chowkeedars of villages might be charged with the collecting and sowing of the babool seeds, and if one tree only could be got to grow on every acre of suitable land in the district, there would soon be no scarcity of wood of the required description, and at the same time considerable profit would accrue to the proprietors of the land, and little or no damage done to the crops.

53. *New trees—Correspondence.*—I have been fortunate enough in obtaining a small supply of seed of the much-talked-of Chinese black wood from the Collector of Dharwar, which tree is said to be particularly suitable for covering dry, barren hills.

54. *Correspondence.*—The correspondence returns are given below, which are as follow :—

	Receipts.	Issues.
English	640	733
Vernacular	402	116
Total ...	1,042	849

No. 102, dated 6th May 1876.

From—E. McA. Moir, Esq., *Assistant Conservator of Forests,*

To—The Commissioner of Ajmere and Mhairwarra.

In forwarding the half-yearly report, ending 31st March 1876, along with annual accounts and statements, I have the honour to state that a copy of the annual summary of receipts and expenditure has been forwarded to the Conservator, North-Western Provinces, for verification, with a request that he will return the statement direct to the Secretary to Chief Commissioner, as the report cannot be delayed pending a reply.

2. With reference to paragraph 5 of Government of India's No. 198, dated 19th February 1875, you will observe that the Comptroller-General is charged with the duty of verifying these statements; but from a perusal of the accompanying letter received in reply to the letter forwarding last year's statement; the Comptroller-General states that he does not audit the accounts, and therefore cannot verify the figures.

3. I shall, therefore, feel obliged if you will explain this matter fully to the Chief Commissioner whilst forwarding the report.

Memo. No. 4051, dated 25th September 1875.

From—The Assistant Comptroller-General,

To—The Assistant Conservator of Forests, Ajmere.

Returns the annual account of the Ajmere Forest Division and summary of receipts and charges for 1874-75, received with his No. 183, dated 5th instant, and states that, as this Office does not audit the charges of the Forest Department, Ajmere, the charges made by the Conservator, North-Western Provinces, in the summary statement cannot be verified. The expenditure under A. and B., Rs. 17,753-3-0 and Rs. 8,813-5-8, respectively, shewn in the annual account mentioned above, has been proved correct.

List of Forest cases tried and punishments awarded in Ajmere during the financial year 1875-76.

Number.	Number of persons accused.	Locality where the offence is stated to have been committed.	Nature and description of offence.	Sentence.	Remarks.
1	5	Nagh Pahar	Cutting grass	Four persons fined Rs. 5 each=Rs 20; one released.	
2	4	Burakhan	Grazing	Fine of Rs 8.	
3	9	Nagh Pahar	Cutting grass	All released.	
4	1	Ditto	Damaging tree	Fine of Rs. 5.	
5	1	Ditto	Cutting wood	.....	Pending.
6	1	Ditto	Assault on ranger	.....	Section 353, Indian Penal Code; pending.
7	11	Sreenuggur	Grazing	.....	Pending.
8	1	Taragurh Valleys ...	Not fulfilling conditions of grass contract sold for Rs. 150.	.....	Civil suit pending.
9	3	Nagh Pahar	Grazing	Fine of Rs. 9.	
10	1	Huttoon	Illegally selling grass ...	Rigorous imprisonment for one month and fine of Rs. 15.	Section 405, Indian Penal Code.
11	2	Todgurh	Not rendering assistance in extinguishing forest fire.	Fine of Rs. 60.	
12	Villages 1	Ditto	Negligently allowing fire to extend to State forest.	Dismissed.	
13	14	Nagh Pahar, Ajmere ...	Releasing cattle pounded from forest tract.	Five persons to one week's imprisonment.	Section 24 of Cattle Trespass Act of 1871.
14	1	Ditto ...	Grazing	.....	Pending.
15	6	Ditto ...	Releasing cattle	Fine Rs. 4.	
16	1	Sreenuggur	Cutting green wood ...	Fine of Rs. 5.	
17	1	Shospoorah	Ditto	.....	Pending.
18	2	Ditto	Ditto	.....	Pending.

Ajmere and Mhairwarra,
The 6th May 1876.

E. McA. MOIR,
Asst. Conservator of Forests.

FOREST DEPARTMENT.

Annual Abstract Account of the cash transactions of the Forest Department of the Ajmere District, 1875-76.

Dr. *Cr.*

Year.	Heads of Account.	Amount.	Year.	Heads of Account.	Amount.
		Rs. A. P.			Rs. A. P.
1875-76	To cash in hand on 1st April 1875	50 0 0	1875-76	By expenditure of division— Rs. A. P. "A" ... 12,963 3 3 "B" ... 14,382 14 7	27,346 1 10
"	To revenue received during the year	410 2 9	"	By objectionable items not included in expenditure ...	.....
"	To remittances from public treasuries— By cheques	12,950 15 3	"	" remittances to public treasuries...	410 2 9
	By bills	14,382 14 7	"	" deposits repaid	513 12 6
	To income taxes	.....	"	" advances made	5,234 7 0
"	" deposits received ...	664 7 2	"	" refunds of revenue ...	.....
"	" advances recovered ...	5,234 7 0	"	" cash in hand on 31st March 1876	200 10 8
"	" nominal remittances from Superintendent, Roorkee Workshops	12 4 0			
	Total ...	33,705 2 9		Total ...	33,705 2 9

The 2nd May 1876.

E. McA. MOIR,
Asst. Conser. of Forests, N.-W. Provinces, Ajmere Division.

FORM No. 28.

FOREST DEPARTMENT, AJMERE.

Annual summary of Revenue and Expenditure of the Ajmere Division during the year ending 31*st March* 1876.

Classification.	Amount.
REVENUE.	Rs. A. P.
I. REVENUE FROM WOOD AND BAMBOOS.	
1. Brought to Depôt by Departmental Agency— *a.* Timber and bamboos. *b.* Firewood and charcoal. *c.* Sandal wood.	
2. Wood removed from the forests by purchasers, license-holders and permit-holders— *a.* Timber and bamboos. *b.* Firewood and charcoal	56 12 0
3. From confiscated, drift and waif wood.	
Carried over ...	56 12 0

FORM No. 28.—*continued.*

Classification.	Amount. Rs.	A.	P.
Brought forward ...	56	12	0
II. REVENUE FROM MINOR PRODUCE.			
1. Grazing dues and sale of grass	11	8	0
2. Other minor produce	25	13	3
III. DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.			
1. On wood.			
2. On other forest produce.			
IV. MISCELLANEOUS.			
1. From fines and forfeitures	208	0	8
2. From refunds to the department	35	4	5
3. From other sources	72	12	5
Total ...	410	2	9
A. CONSERVANCY AND WORKS.			
I. COST OF TIMBER OPERATIONS.			
1. On wood and bamboos brought to Depôt by Departmental Agency—			
a. Timber and bamboos.			
b. Firewood and charcoal	57	13	10
c. Sandal wood.			
2. On wood and bamboos removed from the forests by purchasers, license-holders and permit-holders—			
a. Timber and bamboos.			
b. Firewood and charcoal	0	5	0
3. On confiscated, drift and waif wood.			
II. COST OF COLLECTING MINOR PRODUCE.			
1. Grazing grass.			
2. Other forest produce.			
III. COST OF FOREST ORGANIZATION.			
1. Demarcation lines and boundary pillars or marks	2,013	13	6
2. Working plans.			
3. Surveys	153	11	3
IV. COST OF THE TREATMENT AND CREATION OF FORESTS.			
1. Natural forests—			
a. Protection from fire	680	12	10
b. Fencing and enclosing	2,835	13	1
c. Improvement and conservation.			
d. "Reboisement" or restoration of denuded areas	4,930	0	1
2. Artificial Forests—			
a. Formation.			
b. Protection from fire.			
c. Improvement and conservation.			
d. Fencing and enclosing.			
Carried over ...	10,672	5	7

FORM No. 28—*concluded.*

Classification.	Amount. Rs.	A.	P.
Brought forward ...	10,672	5	7
V. RENT OF LEASED FORESTS.			
VI. COST OF COLLECTING DUTY ON PRODUCE OF FOREIGN OR PRIVATE FORESTS IMPORTED INTO BRITISH TERRITORY.			
VII. WORKS OF UTILITY FOR THE DEVELOPMENT OF FORESTS.			
1. Roads and bridges	445	4	3
2. Buildings and offices	959	4	8
3 Compensation for land taken up for forest purposes, or for extinction of forest rights.			
4. Other works.			
VIII. COST OF DEPARTMENTAL CATTLE.			
1. Purchase of stock	50	0	0
2. Hire of stock.			
3. Feed and keep of cattle	98	7	5
IX. COST OF DEPARTMENTAL PLANT AND TOOLS.			
1. For timber and wood operations.			
2. For other purposes	220	6	4
X. MISCELLANEOUS CHARGES.			
1. Refunds.			
2. Law charges.			
3. Other charges	517	7	0
Total of A. Conservancy and Works ...	12,963	3	3
B. ESTABLISHMENTS.			
I. SALARIES.			
1. Pay of Conservator.			
2. Pay of control and executive officers	7,100	0	0
3. Protective establishments	3,107	12	5
4. Office establishments	1,788	0	0
5. Deputation and special allowances.			
II. TRAVELLING ALLOWANCES.			
1. Conservator.			
2. Control and executive officers	1,310	15	2
3. Protective establishments.			
4. Office establishments	159	15	5
III. CONTINGENCIES.			
1. Stationery	33	12	9
2. Carriage of tents and records	542	2	4
3. Pay of Police guards	156	4	9
4. Sundries	174	9	9
5. Official postage	9	6	0
Total of B. Establishments ...	14,382	14	7
GRAND TOTAL OF ALL EXPENDITURE ...	27,346	1	10

E. McA. MOIR,

The 29th April 1876.

Assistant Conservator of Forests,
Ajmere and Mhairwarra.

A.—Statement shewing total Cash transactions of the Forest Department during the financial year 1875-76.

		Rs. As. P.	Rs. As. P.			Rs. As. P.	Rs. As. P.
To cash balance on 1st April 1875—				By expenditure—			
Forest		50 0 0		Forest Department ..		27,846 1 10	
Nazul		400 0 0		Nazul Fund		1,969 14 1	
Court of Wards ...		300 0 0		District roads		1,995 9 0	
			750 0 0	Circular road		213 14 11	
To revenue received during the year—				Court of Wards' estates ...		1,524 6 3	
Forest Department ...		410 2 9					33,049 14 1
Nazul Fund.				By remittances to public treasuries—			
Amount due on sale of forest produce during former years ...	813 4 0			Forest Department ...		410 2 9	
Sales effected during year ...	1,370 10 2			Nazul Fund		1,390 10 2	
Total ...	2,183 14 2			Court of Wards' estates ...		71 0 0	
Deduct outstandings on 31st March 1876 ...	793 4 0						1,871 12 11
		1,390 10 2		By deposits repaid on account Forests		...	513 12 6
Revenue in Court of Wards' estates		71 0 0		By advances made ...		...	5,234 7 0
To sale of grass not credited in any account pending Chief Commissioner's orders as to what account it is to be credited		1,205 0 0		By cash in hand on 31st March 1876—			
			3,076 12 11	Forest Department ...		200 10 8	
To remittances from public treasuries—				Nazul Fund		400 0 0	
Forest Department ...		27,838 13 10		Court of Wards' estates ...		300 0 0	
Nazul Fund		1,969 14 1		Sale of grass on Nagh Pahar, &c.		1,205 0 0	
District roads		1,995 9 0					2,105 10 8
Circular road		213 14 11					
Court of Wards' estates ...		1,524 6 3					
			33,037 10 1				
To deposits received on account Forests		...	664 7 2				
To advances recovered on account Forests		...	5,234 7 0				
To nominal remittances from Superintendent, Roorkee Workshops, on account of Forest Department ...		...	12 4 0				
Total ...		...	42,775 9 2	Total ...		...	42,775 9 2

E. McA. MOIR,

The 6th May 1876.

Assistant Conservator of Forests.

Statement shewing total actual cost of each Forest Reserve, Experimental Plantation or Nursery, up to 31st March 1876.

Area.	Name of Tract.	Designation.	Past expenditure up to 31st March 1875.			Expenditure during 1875-76.			Total.			Remarks.
			Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
2,311	Chang	Forest Reserve ...	2,209	0	11	765	13	10	2,974	14	9	This statement does not include pay of Forest officers, travelling allowances, contingencies, stock or other general charges, as they have been incurred on account of district, as well as for forest purposes properly speaking.
1,920	Huttoon	Ditto	2,048	14	2	1,192	2	0	3,241	0	2	
3,172	Beleawas	Ditto	1,120	11	3	786	11	11	1,907	7	2	
40,003	Burakhan	Ditto	1,975	13	0	3,250	11	1	5,226	8	1	
93	Nusseerabad	Plantation	4,930	15	10	1,040	12	8	5,971	12	1	
3,052	Mohwa Beer	Experimental plantation ..	2,877	7	4	592	10	0	3,470	1	4	
3	Mohwa Bagh	Nursery	.....			96	2	2	96	2	2	
39	Meer Shah Ally Beer ...	Experimental plantation ...	1,261	1	11	163	15	3	1,425	1	2	
16	Meer Shah Ally Bagh ...	Nursery	.....			85	2	7	85	2	7	
97	Hazaree Bagh ...	Experimental plantation ...	1,220	1	9	63	11	5	1,283	13	2	
6	Nachun Bao ...	Ditto	239	6	10	32	6	5	271	13	3	
11	Shahjahanee ...	Nursery	605	14	2	153	0	9	758	14	11	
	Ditto	Experimental plantation ...	...	..		38	14	10	38	14	10	
27	Shekust Musjeed ...	Ditto	202	3	0	113	12	7	315	15	7	
9	Bebee Chilla	Nursery	29	0	0	34	5	5	63	5	5	
32	Beawur	Ditto	938	5	7	757	1	10	1,695	7	5	
231	Delwara and Chang Beers	Experimental plantation ...	198	13	1	1,058	9	3	1,257	6	4	
2,679	Nagh Pahar	Ditto	4,790	13	4	2,118	2	2	6,908	15	6	
1,043	Taragurh	Ditto	4,874	15	3	1,449	3	11	6,324	3	2	
3,681	Sreenuggur and Beer ...	.....	.....			835	7	2	835	7	2	
		Total ...	29,523	9	5	14,628	12	10	44,152	6	3	

E. McA. MOIR,

The 6th May 1876.

Assistant Conservator of Forests.

Detailed Statement of Expenditure of the Forest Department, Ajmere and Mhairwarra, for the year 1875-76.

Number of Estimate.	Name of Tract.	Head of Service.	Particulars.	Rs. A. P.	Amount. Rs. A. P.	Total. Rs. A. P.	REMARKS.
1	Chang	A III 1 ...	Cost of demarcation	... ...	121 0 0		The sanctioned amount for expenditure on this tract during the year was Rs. 1.246, so that a saving of Rs. 480-2-2 has been effected.
		A IV 1 *b* ...	Repairs on old fencing	..	28 10 6		
		„ 1 *d* ...	Pay of bhistee	78 0 0			
		„ ...	Cost of watering apparatus	24 7 1			
		„ ...	„ seeds	9 14 0			
		„ ...	Protection from frost	3 15 0	116 4 1		
		A VII 2 ...	Cost of repairs on chowkees	.....	127 15 3		
		A IX 2 ...	Purchase of tools	.....	12 0 0		
		A X 3 ...	Other charges	.....	4 0 0		
		B I 3 ...	Pay of rangers	... ...	356 0 0	765 13 10	
2	Huttoon	A III 1 ...	Cost of demarcation	... ...	213 5 0		The sanctioned amount was Rs. 1,306, so that saving of Rs. 113-14-0 has been effected.
		A IV 1 *b* ...	„ fencing	... ...	355 14 11		
		„ *d* ...	Pay of bhistees	84 0 0			
		„ ...	Cost of watering apparatus	32 7 11			
		„ ...	Deepening well	4 1 6			
		„ ...	Cost of seeds	16 0 3			
		„ ...	Protection from frost	3 2 0	139 11 8		
		A VII 1 ...	Repairs on path	... ...	1 5 0		
		„ 2 ...	Ditto on chowkees	... ...	105 13 6		
		A IX 2 ...	Purchase of tools	.....	12 0 0		
		A X 3 ...	Other charges	.....	4 0 0		
		B I 3 ...	Pay of rangers	.....	359 15 11	1,192 2 0	
3	Beleawas ...	A III 1 ...	Cost of demarcation	... ...	207 4 6		
		A IV 1 *a* ...	Ditto of fire lines	... ...	85 8 6		
		„ 1 *d* ..	Pay of bhistee	72 0 0			
		„ ...	Cost of watering apparatus	2 7 8			
		„ ...	„ seeds	9 2 6			

Detailed Statement of Expenditure of the Forest Department, Ajmere and Mhairwarra, for the year 1875-76—(continued).

Number of Estimate.	Name of Tract.	Head of Service	Particulars.	Rs. As. P.	Amount. Rs. As. P.	Total. Rs. As. P.	REMARKS.
3	Beleawas—*concluded* ...	A IV 1 *d* ...	Protection from frost	3 2 0	86 12 2		
		A VII 2 ...	Repairs on chowkee	... ...	31 2 9		
		A IX 2 ...	Purchase of tools	... ...	12 0 0		
		A X 2 ...	Other charges	.....	4 0 0		
		B I 3 ...	Pay of rangers	... ...	360 0 0	786 11 11	
4	Burakhan Tract ...	A I 1 *b* ...	Cost of manufacturing charcoal ...	.....	57 13 10		
		A III 1 ...	" demarcation	.....	715 1 1		
		A IV 1 *a* ...	" fire lines	.....	544 14 9		
		" *b* ...	" fencing	.....	680 15 0		
		" *d* ...	Pay of bhistees	60 0 0			
		" ...	Cost of watering apparatus	16 4 0			
		" ...	" seeds	48 6 0	124 10 0		
		A VII 1 ...	Construction of inspection path ...	.....	213 2 9		
		" 2 ...	Repairs on chowkees	.....	156 14 8		
		A VIII 1 ...	Purchase of one buffalo	.....	10 0 0		
		A IX 2 ...	Repairs on tools	... ...	0 3 0		
		A X 3 ...	Other charges	.....	4 0 0		
		B I 3 ...	Pay of rangers	.....	743 0 0	3,250 11 1	
5	Nusseerabad Plantation	A IV 1 *d* ...	Pits with walls round	15 8 6			
		" ...	Pay of establishment	364 1 8			
		" ...	Watering apparatus	8 1 6			
		" ...	Cost of seed	87 15 4			
		" ...	Deepening well	4 4 6			
		" ...	Cost of sowing	38 2 0	518 1 6		
		A VII 1 ...	Repairs on drain	.....	0 6 6		
		A VIII 3 ...	Feed of cattle	.....	12 12 0		
		A IX 2 ...	Cost of tools and plant	.....	9 8 3		
		A X 3 ...	Special grant for maintenance	.....	500 0 0	1,040 12 3	

6	Mohwa Beer and Madar Hill.	A III 1	Cost of demarcation	...	133 5 0	
		A IV 1 *d*	Pay of watering establishment	181 5 3		
		"	Cost of watering apparatus	62 14 7		
		"	Digging pits and sowing seeds	23 4 0		
		"	Repairs on tank	34 7 6		
		"	Cost of seeds	8 8 10		
		"	Protection from frost	12 6 8		
					322 14 10	
		A VII 2	Repairs on chowkee	...	20 0 0	
		A VIII 3	Feed of cattle	...	24 6 2	
		A IX 2	Purchase of tools	...	12 0 0	
		B I 3	Pay of ranger	...	80 0 0	
						592 10 0
7	Mohwa Bagh Nursery	A IV 1 *d*	Pay of malees	76 3 10		
		"	Manure	3 0 0		
		"	Weeding	2 10 0		
		"	Protection from frost	2 4 4		
					84 2 2	
		A IX 2	Cost of tools and plant	...	12 0 0	
						96 2 2
8	Meersha Ally Beer	A IV 1 *d*	Pay of establishment	120 14 9		
		"	Watering apparatus	10 6 4		
		"	Seeds	0 14 0		
		"	Protection from frost	13 8 0		
					145 11 1	
		A VIII 3	Feed of cattle	...	18 4 2	
						163 15 3
9	Meersha Ally Nursery	A IV 1 *d*	Pay of malees	...	73 2 7	
		A IX 2	Cost of tools	...	12 0 0	
						85 2 7
10	Hazaree Bagh	A IV 1 *d*	Pay of malees	42 0 0		
		"	Digging pits and sowing seeds	17 11 6		
		"	Cost of seeds	3 15 11	63 11 5	
						63 11 5
11	Nachan Bao	A IV 1 *d*	Pay of malee	...	30 0 0	
		"	Watering apparatus	...	2 6 5	
						32 6 5

Detailed Statement of Expenditure of the Forest Department, Ajmere and Mhairwarrah, for the year 1875-76—(continued).

Number of Estimate.	Name of Tract.	Head of Service.	Particulars.		Amount.	Total.	REMARKS.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	
12	Shahjahani Nursery ...	A IV 1 *d* ...	Pay of malees	129 14 6			
		" ...	Weeding	6 3 0			
		" ...	Seeds	1 10 3			
		" ...	Manure...	2 10 0			
		" ...	Sundries	0 11 0			
					141 0 9		
		A IX 2 ...	Cost of tools and plant	.....	12 0 0		
						153 0 9	
13	Shahjahani Plantation	A IV 1 *d* ...	Pay of bhistee	38 4 7			
		" ...	Watering apparatus	0 10 3			
					38 14 10		
						38 14 10	
14	Shekust Musjeed ...	A III 1 ..	Cost of demarcation	.....	8 9 9		
		A IV 1 *d* ...	Pay of malee	71 9 7			
		" ...	Watering apparatus	4 11 11			
		" ...	Sowing...	7 11 6			
		" ...	Seeds	0 5 6			
		" ...	Fences round trees	12 0 0			
		" ...	Protection from frost	8 12 4			
					105 2 10		
						113 12 7	
15	Bebee Chilla Nursery ...	A IV 1 *d* ...	Pay of malees	.....	22 5 5		
		A IX 2 ...	Cost of tools	.....	12 0 0		
						34 5 5	
16	Beawar Nursery ...	A III 1 ...	Cost of demarcation...	.....	21 7 0		
		A IV 1 *d* ...	Pay of establishment	378 0 0			
		" ...	Cost of watering apparatus	34 10 2			
		" ...	" of seeds	11 12 6			
		" ...	" of manure	62 5 7			
		" ...	Protection from frost	4 0 0			
		" ...	Cost of sowing	52 8 0			
					543 4 3		
		A VII 2 ...	Repairs on buildings	.....	109 4 4		
		A VIII 1 ...	Purchase of one bullock	.....	40 0 0		
		" 3 ...	Feed of cattle	.....	25 2 10		
		A IX 2 ...	Cost of tools and plant	.....	17 15 5		
						757 1 10	

17	Delwara and Chang Beer	A III 1	Cost of demarcation...	.....	72 7 0		
		A IV 1 *b*	Cost of fencing	.....	859 1 9		
		A IV 1 *d*	Cost of seed	34 11 6			
		"	Sowing ...	5 10 0			
					40 5 6		
		A VII 2	Repairs on chowkee	.....	14 8 0		
		A IX 2	Tools and plant	.....	0 3 0		
		B I 3	Pay of ranger	.....	72 0 0		
						1,058 9 3	
18	Nagh Pahar	A I 2 *b*	Purchase of one receipt stamp	.....	0 1 0		
		A III 1	Cost of demarcation	.....	170 13 11		
		A IV 1 *b*	" fencing	.....	479 6 2		
		" 1 *d*	Pay of bhistees	334 7 9			
		"	Cost of watering apparatus	10 4 3			
		"	Digging pits and sowing seeds	83 13 6			
		"	Cost of seeds	13 2 10			
		"	Protection from frost	46 14 7			
		"	Constructing walls round trees	117 0 6			
		"	Purchase of mango trees	376 8 0			
		"	Sundries	1 4 0			
					983 7 5		
		A VII 1	Repairing path	.....	19 5 0		
		" 2	Construction of chowkee	.....	145 0 8		
		A IX 2	Cost of tools	.....	12 0 0		
		B I 3	Pay of rangers	.....	308 0 0		
						2,118 2 2	
19	Taragurh tract, Ajmere	A I 2 *b*	Paid proclaimer	.....	0 4 0		
		A III 1	Cost of demarcation	.....	74 0 8		
		A IV 1 *a*	" fire protection	.....	50 5 7		
		" 1 *b*	" fencing	.....	131 12 9		
		A IV 1 *d*	Pay of watering establishment	178 11 6			
		"	Cost of watering apparatus	41 1 9			
		"	Digging pits and sowing seed	67 14 6			
		"	Weeding	7 5 0			
		"	Seed	8 0 5			
		"	Manure...	20 3 10			
		"	Construction of pits	105 8 0			
		"	Wall round nursery...	41 9 7			
		"	Preparing land for nursery	82 14 0			
		"	Protection from frost	48 1 4			
		"	Sundries	0 14 9			
					602 4 8		
		A VII 1	Cost of path	.....	211 1 0		
		" 2	Repairs on buildings	.....	47 2 0		
		A VIII 3	Feed of cattle	.....	9 5 3		
		A IX 2	Cost of tools and plant	.....	24 0 0		
		B I 3	Pay of rangers	.....	299 0 0		

Detailed Statement of Expenditure of the Forest Department, Ajmere and Mhairwarrah, for the year 1875-76—(concluded).

Number of Estimate.	Name of Tract.	Head of Service.	Particulars.		Amount.	Total.	REMARKS.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	
	Sreenuggur and Beer...	A III 1 ...	Cost of demarcation	... ...	192 9 4		
		A IV 1 *b* ...	„ fencing	... ...	300 0 0		
		„ *d* ...	„ seeds	31 6 5			
		„ ...	„ sowing	12 8 6			
					43 14 11		
		A VII 2 ...	Construction of chowkee	... ...	201 7 6		
		A VIII 3 ...	Feed of cattle	... ..	3 5 0		
		A IX 2 ...	Tools	.. ...	0 13 2		
		B I 3 ...	Pay of rangers	.. . .	93 4 8		
						835 7 2	
	Church	A IV 1 *d* ...	Purchase of 1 dole (bucket)	... ...	0 12 0		
						0 12 0	
	Stock	A III 1 ...	Slabs for demarcation	....	83 14 3		
		A IV 1 *d* ...	Seed	301 15 6			
		„ ...	Watering apparatus	29 6 5			
		„ ...	Marks for counting trees	5 0 0			
					336 5 11		
		A VIII 3 ...	Feed and keep of cattle	... ...	5 4 0		
		A IX 2 ...	Tools and plant	... ...	59 1 11		
						484 10 1	
	General expenditure ...	A III 3 ...	Cost of surveys	.. ...	153 11 3		
		A IV 1 *d* ...	Pay of establishment	.....	364 9 8		
		A IX 2 ...	Tools and plant	.....	0 9 0		
		B I 2 ...	Pay of executive officers	... ..	7,100 0 0		
		„ 3 ...	„ establishment	... .	436 7 10		
		„ 4 ...	„ office establishment	... ...	1,788 0 0		
		B II 2 ...	Travelling allowance of executive officers ...	... .	1,310 15 2		
		„ 4 ...	„ „ of office establishment ...	... ...	159 15 5		
		B III 1 ...	Stationery charges	.. ...	33 12 9		
		„ 2 ...	Carriage of tents and records	.. ...	542 2 4		
		„ 3 ...	Pay of Police guards	.....	156 4 9		
		„ 4 ...	Sundries	... ...	174 9 9		
		„ 5 ...	Official postage	.....	9 6 0		
						12,230 7 11	
	Collecting plants for Dr. King.	A X 3 ...	Sundry charges	.....	1 7 0	1 7 0	
			GRAND TOTAL OF THE YEAR AS PER SUMMARY OF EXPENDITURE	... ...	...	27,346 1 10	

The 6th May 1876.

E. McA. MOIR,
Asst. Conserv. of Forests, Ajmere and Mhairwarra.

No. 600, dated Simla, 8th July 1876.

From—A. O. HUME, Esq., C.B., *Secretary to the Government of India,*
To—*The Chief Commissioner of Ajmere.*

I AM directed to acknowledge the receipt of your letters noted in the margin, forwarding reports on the progress of forest operations in Ajmere and Mhairwarra for the half-years ending the 30th September 1875 and 31st March 1876. From the last of the two reports it has been noticed with satisfaction that the final demarcation of most of the reserves in Ajmere and Mhairwarra has been completed, and that though there has been some delay in demarcating the three tracts referred to in paragraph 5 of that report, they have been taken in hand, and will shortly be completed.

No. 1103S, dated 5th May 1876.
No. 1490S, dated 15th June 1876.

2. Paragraph 8 of the report for the last half-year contains a statement shewing the length of boundaries demarcated, and in one of the returns appended to the report (which shews the total amount expended on each forest reserve and plantation) the area in acres of the several tracts is given, aggregating 58,515 acres, or 91 square miles. It will, however, be necessary to have more complete returns of these reserves, and I am accordingly to request that, as soon as the three tracts above referred to have been finally demarcated, you will be good enough to furnish the Government of India with a detailed statement of each reserve, stating area, the description of boundaries and boundary marks, soil and rocks, general description of the forest, statement of villages remaining within the boundaries of the reserve, and statement of any rights or privileges exercised by the inhabitants of these villages and of the vicinity. The statement should also give information regarding the maps prepared of the reserve, and should say whether a plan of operations has been prepared.

3. A further communication on several other points discussed in these reports will be made to you hereafter.

No. 776, dated Simla, 15th August 1876.

From—A. O. HUME, Esq., C.B., *Secretary to the Government of India,*
To—*The Chief Commissioner of Ajmere.*

IN continuation of the letter from this Office, No. 600, dated the 8th ultimo, I am directed to communicate the following remarks on the two half-yearly reports of forest administration in Ajmere and Mhairwarra, ending the 30th September 1875 and 31st March 1876, received with your letters noted in the margin.

No. 1103S, dated 5th May 1876.
" 1490S, dated 15th June 1876.

3. Mr. McA. Moir, in paragraph 3 of his report ending the 31st March 1876, gives an account of the progress made in fencing the reserves. Before he leaves the province, he should be requested to prepare a report stating what length of boundary of each reserve has been fenced, and what length remains unfenced.

3. Paragraphs 46 to 51 of the report for the half-year ending the 30th September 1875 are devoted to fire protection. The progress reported is satisfactory, but what Mr. McA. Moir says seems to shew that he has underrated the damage done by fires. The views of the Government of India on this subject were conveyed to you in paragraph 6 of the letter from this Office, No. 963, dated the 30th August 1875, and the Governor-General in Council sees no reason for modifying the remarks then made.

Numerous facts are recorded in the present report shewing the great improvement which has been effected by the protection of a few years on the dry and stony hills included within the reserves. In paragraph 45 the Assistant Conservator reports that the Chang tract in Mhairwarra is now almost impenetrable. According to all accounts these reserves are not stocked with forest composed of large trees, but rather with young growth of all ages, a large portion of which has sprung up since protection commenced. Even in a mature forest, consisting entirely of old trees, fires do much injury ; but it is obvious that, in the present young state of these forests, fires must be most destructive. The Governor-General in Council must insist on effective measures being taken to

protect these reserves continuously against fire, whether they are in charge of the Civil or Forest officers.

4. In paragraph 7 of the report ending the 31st March 1876, Mr. McA. Moir says that the future policy with respect to these reserves will probably be to give them back to their owners, subject to certain restrictions. This is not the first time that such views have been expressed. What Mr. Moir means is not quite clear, but it seems to the Governor-General in Council that the discussion of such projects is premature and unnecessary at the present time, and all that need be said on the subject is, that the present duty of the officer in charge is the maintenance and improvement, by strict and continued conservancy of these reserves, the produce of which will doubtless eventually be of the greatest value to the people of the district.

5. Paragraphs 27 to 34 of the report ending the 30th September 1875, relating to the Nasirabad plantation, will be communicated to the Military Department of the Government of India. Mr. Moir's statements seem to shew that if the plantation had been continued, success might have been attained, and it might eventually have afforded some protection to the station of Nasirabad against the hot winds and drifts of sand from the west side.

6. The Governor-General in Council is gratified to learn, from paragraph 25 of the report ending the 31st March 1876, that eight of the reserves had been surveyed.

It is important that, before Mr. McA. Moir leaves the province, a complete set of the maps should be prepared; and with the view of effecting this, the Superintendent of Forest Surveys has been directed to place himself in communication with the Surveyor-General and with Mr. Moir on the subject.

No. 691, dated Simla, 1st August 1876.

From—C. J. Lyall, Esq., *Under-Secretary to the Government of India,*
To—*The Superintendent of Forest Surveys.*

I am directed to forward an extract (paragraph 25) from the progress report of forest operations in Ajmere and Mhairwarra for the half-year ending the 31st March 1876, together with a copy of the Commissioner's remarks thereon regarding the survey of four forest tracts in Ajmere and four in Mhairwarra, which has been executed by Lieutenant Leach, R.E., of the Topographical Survey Department, and to request that you will place yourself in communication with the Surveyor-General on the subject, and in concert with Mr. McA. Moir, the forest officer in charge of the Ajmere and Mhairwarra reserves, arrange that a sufficient number of copies of the maps of these reserves are placed at the disposal of the Commissioner of Ajmere. The needful area statements of the reserves and their sub-divisions (if any) should be added, and two copies of these maps, with statements of area, should be submitted to this department, and two copies should be deposited in your office.

No. 775, dated 17th August 1876.

Copy forwarded to the Surveyor-General of India for information.

Office Memo. No. 767, dated Simla, 15th August 1876.

From—C. J. Lyall, Esq., *Under-Secretary to the Government of India,*
To—*The Secretary to the Government of India,* Military Department.

With reference to the correspondence ending with endorsement from the Military Department, No. 872, dated the 17th February 1876, the undersigned has the honour to forward an extract (paragraphs 27 to 34) from the progress report of the Forest Department of Ajmere and Mhairwarra for the half-year ending the 30th September 1875, relative to the plantation in the neighbourhood of the Nasirabad Cantonment which has been abandoned. Extract paragraph 5 of the orders passed on that report is also forwarded.

Government Central Press No. 352 R. A. & C.—9-12-76.—410.

CONSERVATOR'S REPORT.

Annual Report No. 1349—112, *F., dated* 15*th August* 1876, *on the Management and Conservancy of the Mysore Forests for the Financial year* 1875—76, *by* CAPTAIN G. J. VAN SOMEREN, *Conservator.*

I have the honor to forward the Forest Administration Report of Mysore for the year 1875—76.

INTRODUCTORY.

LEGISLATIVE.

2. Nil.

SPECIAL.

HEAD 1.—STATE FORESTS.

FIRST SECTION.

3. The list of State forests remains unaltered. The question of the closing of the forests in Sorab, Honnali, and Shikarpur Taluks is still an open one, and I think this is much to be regretted as while time is passing the forests are deteriorating.

4. The list of State forests is now given according to form :—

Forest Division.	District.	No.	Taluk.	No.	Reserved Forests.	Area in 1874-75. Sq. miles.	Added during the year. Sq. miles.	Excluded or transferred to other Heads. Sq. miles.	Total remaining in 1875-76 Sq. miles.
Nagar.	Kadur.	1	Lakvalli ..	1	Lakvalli	35	...	...	35
			Do ...	2	Tegurgudda ...	20	...	...	20
		2	Tarikere ...	3	Ubrani	10	...	...	10
		3	Vastara ...	4	Basankote	8	..	...	8
	Shimoga	4	Shimoga ...	5	Shankargudda ...	9	...	...	9
			Do ...	6	Sakrebail	10	...	...	10
			Do ...	7	Choranyadahalli ...	...	..	...	Proposed.
		5	Nagar ...	8	Masrur ...				
		6	Shikarpur ...	9	Ambligolla ...	16	...	...	do 16
		7	Honnali ..	10	Kumsi ..				
			Do ...	11	Chordi ...				
		8	Sorab ...	12	Tallegadde	5	...	...	5
Mysore.	Mysore.	1	Heggaddevankóte ...	1	Ainur Mariguddi ...	30	...	...	30
			Do ...	2	Begur	37	...	...	37
			Do ...	3	Kakankote	25	...	...	25
			Do ...	4	Viranhoshalli				
			Do ...	5	Metikuppe ...	30	..	...	20
			Do ...	6	Hunsekoppe ...				
		2	Gundlupet ...	7	Bandipur	15	...	...	15
			Do ..	8	Berambadi	31	...	...	31
Nundydroog.	Túmkúr ...	1	Túmkúr ...	1	Devaraydurga ...	18	...	...	18
	Bangalore ...	2	Kankanhalli ..	2	Bilikal	55	...	..	55
	Túmkúr ...	3	Maddagiri ...	3	Maddagiri ...	10	...	...	10
			Do ...	4	Kandal ...				
	Kolar ..	4	Chikballapur ..	5	Nundydroog	7	...	...	7
	Bangalore	5	Magadi ...	6	Killekaval	8	...	...	8
		6	Closepet ...	7	Handigundi Betta ...	14¼	...	...	14¼
		7	Kankanhalli ...	8	Uyamballi ...	21	...	...	21
			Do ...	9	Arkavati ...				
			Do ...	10	Devarbetta ...				
					Evergreen.				
Hassan.	Hassan.	1	Manjarabad ...	1	Kabbinale	14	...	...	14
			Do ...	2	Kagineri	9	...	...	9
			Do ...	3	Bagimalle	6	...	...	6
			Do ..	4	Sundekumri	6	..	...	6
					Total.....	449¼	...	...	449¼

5. The Revenue Survey maps of Shimoga and Lakvalli Taluks will, it is hoped, ere long be furnished to this Office, when the areas given by that Department for the Shankargudda (No. 5), Sakrebail (No. 6) and Lakvalli (No. 1) forests will be adopted in lieu of those which have hitherto been shewn.

6. *Condition of the State Forests.*—In Nagar the *Lakvalli* forest which lies in the middle of a large area of unreserved forest land has of late been but lightly worked for timber. It is well stocked with wood of all kinds. The demarcation lines are in good order and easily discernible. They have been kept clean. The forest will in great part be protected from fire during the next hot season by the operations which will be begun as soon as the monsoon rains admit of work being carried on

7. The *Shankar* forest is in good condition It was not worked for timber during 1875—76; and the demarcation lines are in good order. It is well wooded almost throughout.

8. The *Sakrebail* forest was heavily worked on the license system before it was made over to the Department in 1870. It is close to the river Tunga, and much wood was smuggled from it formerly. It is hoped, and with good reason, that this has now been stopped. The forest is fairly wooded in parts, but as a whole requires rest. The northern boundary is in dispute with an inamdar, but this will shortly be settled. The demarcation lines where cut are in good order.

9. The *Tegurgudda* forest in Lakvalli has not yet been demarcated. It has been held by the Department for some time in reserve, and as the Jagur valley in which it lies is now being opened up by a District Funds road (to which this Department has subscribed), the forest will be a valuable one. It contains much good wood.

10. The *Basankote* forest is not yet demarcated. It too has now become valuable by the new roads which are being opened up, and improved in the neighbourhood.

11. The *Ubrani* forest is well in the dry belt of the country. It is not demarcated, but will, it is hoped, be settled during this year. It requires conservation being at present poor.

12. Forests 7 to 12 in the list are still proposed. The alteration in the limits of taluks has taken No. 8 out of Nagar. The Forest Department has applied for land, which, if made over, in the Honnali, Sorab and Shikarpur forests, will bring under its care the forests now mentioned; and a portion of the extension asked for will add to the already constituted Shankar and Sakrebail forests in Shimoga.

13. In the Mysore Forest Division the State forests form a continuous belt from Bandipur in the south on the Mysore-Ootacamund road to not far south of Fraserpet on the Mysore-Mercara road The forests are all deciduous; and all more or less require rest. They were for many years before the formation of the Forest Department worked on license, and on a stump fee (8 *annas per teak tree*). When the Department took charge of them, fellings though reduced were still for a time far in excess of what the forests could bear, especially in teak and the better classes of wood. In para 43 of an appendix to my Report for 1872—73, appears a statement which shews the fellings of teak and junglewood in Ashtagram Division in two groups of 4 years each, 1864—65 to 1868—69 and 1868—69 to 1871—72. There were then no fellings in Hassan Division, so that actually the fellings were those of the Mysore District. The statement shews that in the period of time indicated by the second group of years, there were 56,957 cubic feet *less* of teak, and 14,861 cubic feet *more* of other woods felled than in the period comprised in the first group of years. Between 1872—73 and 1875—76 (both inclusive) the fellings *in the State forests* of the Mysore Forest Division have been—of teak 13,611 cubic feet, of which 2,153 feet were poles and small wood; of junglewood 14,482 cubic feet, of which 1,421 feet were poles and small wood; or a decrease during the last quadrennial period of 36,422 cubic feet of teak, and 51,496 cubic feet of junglewood, as compared with that immediately preceding it.

14. The total *annual* yield has thus in 12 years been brought down from 26,775 to 3,403 cubic feet of teak and from 12,779 to 3,820 cubic feet of junglewood. The Department is not yet in a position to say, on the one hand, that this is all these forests ought to yield, or on the other hand that the fellings should be increased. The forests must first be set off in regular blocks and compartments before any trustworthy data of yield can be collected, and this not an affair of days or weeks merely. A good beginning has been made in Begur, where the operations undertaken to protect the forest from fire have been laid out so as also to divide its area (35 square miles) into working blocks and compartments.

15. These forests like all others in South India, and most I believe throughout India, have hitherto been worked entirely on jardinage, or by selection. It was some years ago forced upon the attention of the officers of the Department that the forests were far from what the popular idea credited them with being, *viz.*' inexhaustible.' They were found in very many places to be exceedingly poor, and hence the determination arrived at to diminish the fellings. A beginning will be made this year (1876—77) to introduce in a small way the felling by the *coupe* system in the Ainur Mariguddi forest. Here 200 acres will be selected and all markotable mature wood of all kinds cut out, good seed bearers of the more valuable kinds being left. All useless wood will be girdled and so killed. The production of young teak and the better classes of junglewood from seed will be fostered as much as possible, and the gradual extension of this system, which is for the present merely tentative, will depend upon the results of this experiment proposed by Mr. Dickinson now in charge of the Forest Division. Meanwhile felling by selection must be carried on for a time elsewhere.

16. With the foregoing observations which apply to the complete belt of State forests in the Mysore Forest Division, it would be useless to go into greater detail regarding the condition of each of the eight forests which compose it, further than to state that the three central ones, *Kakankote*, *Begur* and *Ainur Mariguddi* contain the largest quantity of large teak and are those which have grown and will grow the finest wood of all kinds owing to rain-fall and the soil. The three to the north west, *Metikuppe*, *Hunsekuppe* and *Viranhoshalli* contain much stunted teak and are as a whole much poorer than those in the centre. Those more to the south, *viz. Berambadi* and *Bandipur*, contain less teak, but in parts grow good junglewood. Of the two Bandipur is the poorer. Bamboos grow almost everywhere in these forests, and some remarks regarding this growth and its effects will be found further on.

17. The demarcation lines in this Division are everywhere in fair order and easily seen.

18. In the Nundydroog Forest Division, the *Devaraydurga* forest is growing well. The demarcation lines are in good order. It has lately (since 1st April 1876) been placed with Maddagiri and Kandal under the immediate charge of Mr. W. King, Sub-Assistant Conservator), and operations are now in progress for extending it, for ensuring its absolute immunity from fire (as far as we can do so), and to obtain a small revenue from it in return for the conservation and rest which it has enjoyed for nine years past.

19. The *Maddagiri* and *Kandal* forests are now being enlarged and their boundaries modified, the taluk having just been settled. These forests which adjoin each other are like Devaraydurga in the dry belt, and contain small but useful timber. They require rest and conservation, and will eventually be very valuable to the neighbouring country generally.

20. The *Bilikal* forest in Kankanhalli Taluk is another forest which in this Division will be of far greater value in the future than it is now. It has been heavily worked. The Department is in possession of it, but owing to there being villages within it, it cannot be so carefully kept as can others. Grazing has from time to time to be allowed, and owing to the drought last year and this, cattle are allowed to enter it. The lines are in fair condition only

21. *Killekaval* forest yields little else than male bamboos. It is left to recover itself. The lines in fair condition.

22. *Handigundi Betta* closed more as a fuel and small wood tract. Lines not in good condition.

23. Nos. 8, 9, and 10 in this Forest Division are very scattered, and it is in contemplation to give them up as State forests in the re-distribution of work.

24. The *Nundydroog* forest lines are in fair order. The forest itself is merely small growth amongst rocks, with rather better tree vegetation in the lower ravines and valleys. But these isolated patches of vegetation are valuable for many other reasons than merely as wood producing tracts.

25. In the Hassan Forest Division the four forests are all evergreen and in the ghats. They at present yield very little revenue. They are not demarcated by cut lines.

26. *Demarcation.*—No new work done in any of the Divisions, in forests which appear in the lists this year. But in the Hassan Forest Division, the Vijiyapur Kaval was set off and here seven miles, five furlongs of demarcation lines were cut; a portion has still to be settled. A small forest (Hiple), which had lapsed to the Government, owing to the failure of the holder to plant it up with coffee, was made over to the Department for a sandal reserve It measures 208 acres and was demarcated at a cost of Rs 14-8-0.

27. In the forests shown in the list in para 4, old lines were cleared as shewn below:—

Mysore Forest Division	..	Miles 19	Cost	Rs. 214
Nundydroog do	..	„ 74		„ 747

28. In my Report for 1874—75, I mentioned that the posts put up along the lines had fallen in several places. It is I think a thing to be aimed at that the Department should every where if possible have but one description of marks along the cut lines. I have not yet been able to decide upon any; but in the Nagar Forest Division, at the Deputy Conservator's suggestion, round mounds of earth, so as to be distinguished from the oblong mounds of the Revenue Survey Department, are being tried. Stone is not procurable in all places, masonry pillars would always be very expensive and hollow pillars of burnt clay (like those in use in the Changa Manga plantation in the Punjab), are also expensive here. If practicable I should like to see all our demarcation lines covered with trees of a kind altogether distinct from any which grow naturally in the Mysore forests, a narrow staff line only being kept clear either up the centre or the side of the line of trees. I am disposed to think that casuarinas would answer the purpose well in many instances. They would, if planted close, soon cover the ground, stop all undergrowth and growth of grass, and form a very unmistakeable line. As they would only be required to form a permanent line setting off the forests, it would not matter if they did not grow up into large and fine trees every where. It may be objected that they would burn easily if a sweeping fire came up from the district forests, and this objection has weight. But as the district forests are burnt yearly, and will always be so burnt, I see no practical or valid reason why the Forest Officers should not *early in the season* burn off the grass in the district forests all along their lines of casuarinas supposing them to be grown. The experiment is worth a trial which will be made. The tree will grow nearly everywhere in Mysore, except in swamps or among the rocks of Devaraydurga and Nundydroog. Failing the casuarina, the *eugenia jambolana* (nerale) might do as a hardy tree.

29. *Growth of Bamboos in the Forests.*—Between 1865 and 1873, the bamboos in many parts of Mysore seeded and died. In the Ashtagram Division this phenomenon was more general than elsewhere, and very marked in our belt of State forests. The young bamboo is now beginning to assert itself, and (as belonging to a report on the condition of the forests), I would here note the observations made by Mr. Dickinson and Mr. Hutchins. These officers both state that the growth of bamboos is so dense that it greatly retards the growth of several kinds of trees and among them teak. Mr. Dickinson after careful and extended observations reports that "many parts of the Begur and Ainur Mariguddi forests are composed of bamboo jungle surmounted by forest trees, and in this kind of forest I almost invariably noticed that where an old tree had been

filled the bamboos have so grown over as to keep any seeds from springing up." That teak is so kept down is, I am aware, likely to be contested by some officers of experience, but my own observation leads me to agree with Mr. Dickinson. In the Mastiguddi teak plantation the bamboo is one of the greatest enemies to the young teak. When the tree is some six to eight feet high, bamboos may tend to draw it up, but I am certainly inclined to think that the presence of much bamboo, more especially when young, prevents the reproduction of teak and other trees. The *coupe* to be made this year in Ainur Mariguddi will be cleared of bamboos.

SECOND SECTION.

Requirements of people in the vicinity of State Forests in the matter of wood, &c., how provided for.

30. By sale of wood from small depôts.

THIRD SECTION.

31. Prosecutions during the year for breaches of forest rules are given below:—

Forest Divisions.	No of Prosecutions.		Convictions obtained.		Cases pending.	
	Number of cases.	Number of persons.	Number of cases.	Number of persons	Number of cases.	Number of persons.
Nagar	208	400	176	315	...	...
Mysore	15	42	13	39	2	3
Hassan	6	16	6	15	...	...
Nundydroog	125	287	114	224	...	...
Total.. ..	354	745	309	598	2	3

FOURTH SECTION.

Improvement and Extension of Forests.

32. In Nagar Rs. 37 were spent in repairing the Sukalarahatti hut. In Mysore, existing cart tracts were repaired at a cost of Rs. 44–0 0. In Hassan Rs. 20 were spent on a small bridge on the Anebetta-Tollalu road, and Rs. 48 spent on 8 miles of the Alur Settballi forest road.

33. The work done at the Vijayapur kaval and Hiple was reported in para 26 under demarcations; a number of small lapsed jungles were in Hassan made over to the Forest Department, their total area being 314 acres

34. *Protection from Fire.*—In *Nagar* the settled portion of the Sakrebail forest about 4 square miles was successfully protected against fire for the second year. Fires were also kept out of the Shankar forest, one acre only being burnt of 9 square miles In *Mysore* good progress was made in operations begun for the protection of the Begur forest (35 square miles). The forest was burnt in parts during the year, but since the beginning of the current year a good firepath has been completed all round it, and another cut through it, dividing it into two blocks. The operations will be extended during the year, and the hoped for result is the complete protection of the forest against fires in the coming hot season. The operations in Ainur Mariguddi were not successful owing partly to the very early period of the season when the fire commenced owing to the drought last year, and to the want of labor, owing to the competition with the neighbouring Madras Officers who employed themselves in cutting lines in various directions by way of settling an old dispute regarding boundaries

In *Nundydroog.*—Devaraydurga forest was again successfully protected; a portion of the Nundydroog forest was burnt, the greater part escaped. The lines in which fire-paths are to be cut were laid out in the Bilikal forest and about 2½ miles cut, and a little work was done in Nundydroog.

35. The following statement summarizes the operations.

Area protected in acres.	Cost in Rupees.	Remarks.
20,480	751	Includes expenditure on work done in Begur forest, but no area shewn for it.

36. In ordinary years the season during which fires may be looked for in Mysore is from the end of February to middle of May. In 1875—76, in south Mysore the country was burning early in January, and measures are being taken to try and get the Begur forest, and, if possible, a large part of Ainur Mariguddi, protected before 1st January next. Mr. Hutchins was specially deputed on this work, and he will return to it again when the forests are open. In Nagar, the Lakvalli forest is to be taken in hand this year; and in Nundydroog, the Killekaval and Handigundibetta forests. These areas added to what is already done will bring about 90,000 acres under protection. The cost per acre will be higher than that hitherto incurred; as parts of the forests where dry bamboo clumps are abundant will require broad paths and much watching.

PLANTATIONS.

37. The prescribed form shewing planted areas only is now given :—

Names of Plantations.	Area in 1874—75. Acres.	Total Cost. Rs.	Area added during 1875—76.	Amount expended in 1875—76. Rs.	Total Area up to 1875—76. Acres.	Total Expenditure up to 1875—76. Rs.
1. Lakvalli (Teak.)...	15	897	...	11	15	908
2. Sakrebail do ...	30	2,928	...	10	30	2,938
3. Hebbe do ...	9¼	920	...	8	9¼	928
4. Kakankote do ...	93	5,899	...	546	93	6,445
5. Mastiguddi do ...	11	964	50	1,159	61	2,123
6. Kumbarhalli (Timber)...	241	6,715	93	2,370	334	9,085
7. Maddagiri do ...	63	1,660	...	209	63	1,869
8. Alkol (Sandal)...	71	821	...	36	71	857
9. Anapankatte do ...	237	861	...	158	237	1,019
10. Gurapur. do ...	55	2,702	...	250	55	2,952
11. Karepur do ...	5	202	...	...	5	202
12. Nayihalla do ...	...	...	46	470	46	470
13. Chota and Bara Hosbardi (Fuel)...	225	8,765	152	3,846	377	12,611
14. Jadiganhalli do ...	105½	3,386	91½	2,065	197	5,401
15. Nellal do ...	160	4,006	84	2,588	244	6,594
16. Kadgodi do ...	113	3,766	147	3,126	260	6,892
17. Kurandhalli do ...	179	2,829	84	1,765	263	4,594
18. Karpanhalli do ...	103	3,676	36	1,742	139	5,418
19. Marsandra do ...	207	4,247	115	2,635	322	6,882
20. Appasandra do ...	165	4,517	99	2,218	264	6,735
21. Kumbalgod do ...	107	5,815	60	1,434	167	7,249
22. Santaveri (Exotic)...	4½	1,049	...	4	4½	1,053
Total...	2,199	66,575	1,057½	26,650	3,256½	93,225
Sundries. See Statement in Appendix...	...	5,203	...	2,774	...	7,977
Grand Total...	2,199	71,778	1,057½	29,424	3,256½	1,01,202

38. This form shews a total addition of 1,057½ acres during the year. Sundries bring up the total expenditure to Rs. 29,424 for the year; see statement in appendix. Taking the sum thus arrived at as total expenditure the following summary shews the results:—

	Acres.		Rs.		
Year opened with a planted area of	2,199	which cost	71,778	averaging per acre	32—10—3
Year's work was a planted area of	1,057½	do	29,424	do	27—13—1
Year closed with a planted area of	3,256½	do	1,01,202	do	31— 1—8

shewing a total reduction of Rs. 1—9—0 per acre on total results as compared with results up to 31st March 1875.

39. It will be noticed that the area of the Kakankote plantation has been diminished; while a new plantation appears, *viz.* Mastiguddi. Both are within the boundaries of the Kakankote forest, and not far from each other. The Government of India in its Nos. 164 of 23rd February last (Department of Revenue, Agriculture and Commerce), see Proceedings of Chief Commissioner No. 9467—R.-F. 296, of 4th March last, called for a detailed account of the work that had been done at the Mastiguddi teak plantation; I have therefore now shewn it separately.

Detailed Description of state of each Plantation.

40. *Lakvalli (Teak) (i.)*—No extension for reasons given in previous years. Was protected from fire. This plantation was planted up between 1861 and 1863. In 1864 it was handed over to the Forest Department; but instructions to stop all work were issued in the same year as the Madras Irrigation Company contemplated swamping it within their large reservoir, a work still, (in 1876), as far off to all appearance as it was in 1864. The age of the trees now vary from 15 to 13 years, and I directed that certain data should be collected to shew their growth. The plantation is in a long plot of ground, and narrow throughout, but is at one end narrower than at the other. The oldest trees are at the narrower end. The trees on the last five lines across the breadth at either end, and in the five central lines throughout the entire length lying between the ten lines at either end, were counted; their exact height, and their girth at six feet from the ground ascertained. The following statement gives the total results. Compartment A. is that which includes the five cross lines at the narrow end. C. the five cross lines at the wider end. B. the five lines in the length between A. and C. There were in all 1,620 trees counted out of 11,759. The tallest tree measured was 57 feet with a girth of 27 inches; the stoutest tree girthed 33 inches with a height of 45 feet; the smallest tree was six feet with a girth of two inches.

Lakvalli Teak Plantation.

Compartment.	Area in acres.	No. of trees per acre (mean.)	Height in feet (mean.)	Girth in inches (mean.)	Remarks.
A	·152	434·2	43·02	18·67	
B	2·488	530·9	30·19	12·89	
C	·495	468	21·01	10·31	
Total area measured.	3·135	...	..	...	
Means for the three compartments ...	...	477·7	31·71	13·95	

It will be interesting and instructive to have this compared with the growth of teak in plantations in other provinces, and these recorded results will admit of comparison some years hence between the growth of teak in north-west Mysore and in south Mysore at Kakankote.

41. *Sakrebail (Teak) (ii.)*—No extensions, but protected from fire and growing well.

42. *Hebbe (Teak) (iii.)*—No extensions; not good.

43. *Kahankote (iv.)*—Consists now of two plots (see para 39). No extensions. The fifty-three acre plot at the old fort is looking extremely well. Fire got into this plantation from the neighbouring forest, in spite of a wide and clear firepath, but scarcely any damage was done. The whole matter has been reported on at length to the Chief Commissioner, who closed it by his Proceedings No 4521—147 of the 1st August 1876, in which he writes as follows :—

" It is satisfactory to learn that the loss sustained by the plantation is inconsiderable."

The lines are being widened, and it is hoped that no such accident will again occur. The forty acre plot was unfavorably reported on last year. It is still much damaged by elephants, and as last year was very unfavorable to planting operations generally, no extensions were made here. I think it will be better to turn our whole attention to the new land at Mastiguddi.

44. *Mastiguddi (Teak) (v.)*—The Assistant Conservator writes as follows :—

1st of Mastiguddi Series.

(33.) " The work was commenced in 1874, in which year 11 acres were cleared of all former growth, and teak seed sown in patches six feet apart at a total cost of Rs. 461—7—0. The patches being dug out to about a foot cube and then filled up and the seed dibbled in. This operation was completed in May. Good rain fell in that year and there were not many failures. These were supplied in the month of August; but do not appear to have succeeded well as apparently the rain failed after they were put down.

(34.) " In August 1875, this block was weeded at a cost of Rs. 107—4—0 and pitted up for vacancies, but owing to the extremely dry season it was thought useless to put down plants.

(35.) " The expenditure up to date is thus Rs. 638—3—0. An average of Rs. 58—0—3 per acre.

(36.) " The plants now look fairly healthy, and some quite young plants have come up apparently from seeds which lay dormant the first season. A nursery has been formed and vacancies will be filled up during the monsoon.

2nd of Mastiguddi Series.

(37.) " During the season of 1875 a block adjoining the above to the north, of 50 acres was cleared by the middle of May at a cost of Rs. 594—8—0. Seed was put down in the same manner as in the first block at a cost of Rs 365—4—0; this was finished on the 28th June 1875

(38) " The seeds sprouted well, but the season was a very dry one and there was a large proportion of failures. But it is to be hoped that a good deal of the seed is lying dormant and will come up this season.

(39.) " This block will be weeded and re-stocked during the monsoon.

(40.) " The total cost of block up to date Rs. 1,061—4—0, average per acre Rs. 21—3—7.

3rd of Mastiguddi Series.

(41.) " Another block of 50 acres to the north of last years' was measured off, and the felling and clearing commenced in December 1875 and seed sown in patches at 4 feet instead of 6 feet as in former years.

(42.) " A sum of Rs. 423—5—0 was spent on this work up to date."

45. *Kumbarhalli (Timber) (vi).*—This plantation suffered somewhat from want of supervision by an officer. It is 50 miles from Bangalore, and has lately been placed, with the forest of Devaraydurga in which it is situated, under Mr. King's immediate care. Mr. King is stationed at Túmkúr only seven miles away from the work.

46. *Maddagiri (Timber) (vii.)*—No extensions, but maintained and doing fairly.

47. *Alkol (Sandal)* (viii.)—Here seeds were dibbled in, the whole work being improvement. The plantation has now in it a large number of trees, but the growth is slow.

48. *Annappankatte (Sandal)* (ix.)—Here too seeds were dibbled in all over the area, and the growth is like that at Alkol.

49. *Gurpur (Sandal)* (x.)—This plantation has again been burnt, the fire originated within the boundaries, but how is not known. It is with regret that I have to report this poor result again.

50. *Karepur (Sandal)* (xi.)—A small experimental plantation which has been closed from three years now.

51. *Nayihalla (Sandal)* (xii.)—Here 46 acres were sown with sandal, and germinated well. Up till August the young plants looked healthy, but the failure of the rains last year was the cause of very many of them dying off. Plants had also been raised in nurseries for the purpose of filling up blanks, but owing to the entire want of rain, none were put out, as it would have been money wasted.

52. This year Mr. King has been directed to plant up two acres with sandal raised in nurseries at Kumbarhalli and put out in pits 3 feet cube. The Madras Forest Department has raised plantations in this way, and there is therefore no reason why we should not do it. But they have spent Rs. 256 per acre. I trust we shall be able to raise 1,360 trees in the two acres at a total cost of Rs. 70 or Rs. 35 per acre.

53. *Fuel Plantations in Nundydroog.*—The failure of the rains last year has already been noticed in the remarks on the Mastiguddi teak plantation and on Nayihalla sandal plantation. The Nundydroog Division suffered generally from the same cause, and the operations throughout all the plantations were greatly affected by the adverse seasons.

54. *Chota and Bara Hosahardi (Fuel)* (xiii.)—Here the nurseries were well stocked with healthy plants and 152 acres were planted out. For a time they did well, but the early cessation of the first rains, and the almost entire failure of the September and October monsoon, and the peculiarly low rainfall at this particular locality killed acre after acre of young trees, till 44 per cent of the new plantings died out. The trees of the preceding year made little growth, but lived through the bad season, which is satisfactory. So little rain fell here that we find it difficult to get water even now for the new nurseries for next season, and have consequently had to hire land outside the plantation.

55. *Jadiganhalli (Fuel)* (xiv.)—This plantation did not suffer so much as No. xiii for want of rain. Occasional local showers fell here, and did infinite good. Losses in new plantings were not quite 8 per cent. The growth of older trees was fair, not good, and the plantation looks well.

56. Nellal (*Fuel*) (xv.)—An extension of 84 acres; losses owing to want of rain, 18 per cent nearly. Otherwise the plantation is in good order.

57. *Kadgodi (Fuel)* (xvi.)—An extension of 147 acres. The plantation benefited by a few local showers, and the loss has been small, about 6 per cent only. The Maistry in charge is fond of his work, and deserves great credit for the way in which he turns it out.

58. *Kurundhalli (Fuel)* (xvii)—An extension of 84 acres, and the reported losses are only a little more than 6 per cent on the year's work. This plantation is much cumbered with rank and small growth, and though parts of it look well, it is as a whole not as satisfactory as could be desired. Here I think it safe to draw attention to para 29 (15) of my Report for 1873—74, in which I state that about 121 acres of this plantation are only nominally planted up. The big pit system is the only trustworthy one for East Mysore, with most of the trees which we wish to raise.

59. *Karpanhalli* (*Fuel*) (xviii.)—An extension of 36 acres, and on the year's work a failure of nearly 36 per cent. There was almost an entire failure of rain here. The outlying portion (Bonganur) is finished, being planted throughout with casuarinas, all looking healthy and well.

60. *Marsandra.*(*Fuel*) (xix.)—Extension 1 15 acres; failures in year's work between 13 and 14 per cent. The plantation is looking well taking into consideration the adverse season.

61. *Appasandra* (*Fuel*) (xx.)—An extension of 99 acres, and a failure in the year's work of nearly 16 per cent. The plantation has also suffered somewhat from want of care on the part of the Maistry and inroads of cattle. The Maistry is to be dismissed.

62. *Kumbalgod* (*Fuel*) (xxi.)—An extension of 60 acres, and a failure of 31 per cent. The water here has failed entirely, and the plantation will be closed next month and kept up simply as a fuel reserve.

63. The average percentage of failures in the year's first planting on the whole of the fuel plantations (9 in number), has been about 18 per cent. But before the season closed, all the failures had been planted up in Nos. 14, 15, and 16, and this reduces the average of failures to between 14 and 15 per cent; which will I trust not be thought by any means excessive.

64. Much good work was done in some of the plantations in clearing away the growth of thorns. The planted trees benefited greatly thereby. But I fear that this work will in future have to be done departmentally. The contractors who had the right of appropriating all they removed last year will not consent to the same terms again, as they lost money thereby.

65. A portion of No. xvi (Kadgodi) has been planted out at distances of 10 feet instead of 15, the ground being open.

66. *Experiments with various trees.*—In para 40 of my Report for 1874—75, I stated that we had raised five trees from seed sent us as *carob*, (ceratonia siliqua). These trees are now doing fairly. But I have some doubts as to their being the carob after all. They were sent me by the Chief Engineer. In a memo which accompanied the packet, the tree was said to be sometimes monœcious sometimes diœcious (?) The seeds in question were from a single tree growing at Oosoor in the Madras Presidency, the only one that had been raised there; it must therefore whatever else it is, be a monœcious tree. But in the memo on the carob tree by Mr. O'Connor sent down by the Government of India with its No. 4—232 of 9th June 1876, Department of Revenue, Agriculture and Commerce, it is stated that the carob tree is diœcious. Application has been made for a supply of seed from the Government of India.

67. *Mahogany.*—Some mahogany seed was received from Calcutta. The first lot that came down was all bad. Out of a second supply, 25 apparently good seeds were sown on the 7th June last, after having been soaked in camphor water for 2 hours; 14 germinated, 4 on the 9th day, 8 on the 10th and 2 on the 12th day. One was given to the Superintendent, Lal Bagh, 6 died, and there are 7 in the plantations put out into pits. The largest is 3 feet high, the smallest 9 inches.

68. *Red Saunders* (pterocarpus santalinus).—A supply of seed was obtained from the Conservator of Forests in Madras. Printed instructions accompanied the parcel. These were carefully followed out; but not a single seed germinated. As the tree is a very valuable one, and is likely to thrive well in East Mysore, experiments will be carried on till success is obtained in the attempt to introduce this tree into Mysore.

69. Experiments with the Albizzia moluccana, lagerstrœmia microcarpa, and the Noga all failed.

70. *Cloves.*—Some clove seeds were received from the Straits. A portion was packed in earth in a box, and on opening the parcel in Bangalore, I found that the seeds had

germinated, so they were at once made over to the Superintendent of the Lal Bagh, as he was on the spot. Of the seeds in packets, none germinated.*

71. *Sâl.*—Since the beginning of 1876—77, sâl seeds received from the Central Provinces have been put down, and several have germinated.

72. *Santaveri* (*Exotic*) (xxii) in Nagar Forest Division. Simply kept up. No extensions. In this Division, a supply of rubber (Ficus elastica) seed from Assam was put out, but not one seed germinated.

73. In the Hassan District, the experiments were continued at the Baktarvalli plantation, where 78 acres were sown with sandal in patches at 6′ distance and a fence put up round the sown land, and a fire path cut round it. At Vijiyapur a few pits were dug in which plants will be put out this year. The Hirikere or Narsipur plantation was abandoned; see para 49 last clause of the Report for 1874—75.

FIFTH SECTION.

Actual Yield of Forests, Disposal of Timber.

74. In accordance with the instructions conveyed in para 5 of the Review by the Government of India of the Mysore Forest Report for 1874—75, (if I have correctly understood them), the fellings throughout Mysore are now exhibited in one statement. The fellings in the State forests are noted in the remarks column. Collections and sales of timber are also embodied in single statements instead of by Forest Divisions as hitherto.

75. The sandal operations are also thrown together. I have been directed to state whether it is correctly understood by the Government of India that "only roots and dry and dead wood were collected, and only hollow, unsound and otherwise deteriorating trees cut." The Government of India understands correctly what is being done under this head. The instructions are dated 2nd March 1876, and I regret that I cannot give the number of *trees* felled. This will be given next year, but the number of trees is small and should I suppose exclude all broken and incomplete individuals.

76. Statement shewing the timber and bamboos felled in the Mysore forests during 1875—76.

Description.	Nundydroog Division.		Nagar Division.		Mysore Division.		Hassan Division.		Total.		Remarks.
	Logs.	Cubical contents.	Logs.	Cubical contents.	Logs.	Cubical contents.	Logs.	Cubical contents.	Logs.	Cubical contents.	
Teak ...	...	...	3,882	...	*6,007	7,633	...	...	9,899	7,633	The quantity felled in State Forests was:— Teak. Junglewood. Teak Poles. Bamboos Fibre. No. c. f. No. c. f. No. c. f. Number. (Loads) Mysore Do.... 78 446 24 66 200 200 4,150 ... Nagar " ....479 1,437 18 142 518 ... 16,945 657 Total....487 1,883 42 208 718 200 20,995 577 The rest of the felling throughout the country was in District Forests.
Junglewood ...	...	...	6,530	...	17,964	45,787	153	2,005	24,647	47,792	
Teak Poles, &c.	..	...	582	...	...	...	...	...	582	...	
Junglewood do.	...	...	1,847	...	...	...	...	...	1,847	...	
Bamboos (Number)...	18,214	..	164,961	...	147,003	...	...	...	330,178	..	
Fibre (Loads) .	...	...	657	..	...	...	...	...	657	...	
Total ...	18,214	...	178,459	...	170,974	53,420	153	2,005	367,800	55,425	

* But are included in the figures in the other columns of the statement

77. Statement shewing the timber and bamboos collected at

Description of Wood.	Nagar Division.									Mysore Division.								
	Logs.	Cubical Contents.	Total Cost of felling, carting, &c.			Average Rate per cubic foot.				Logs.	Cubical Contents.	Total Cost of felling, carting, &c.			Average Rate per cubic foot.		
Teak	2,471	8,131	12,087	13	1	0	4	4		916	10,608				0	6	8
Junglewood ...	4,789	36,378								5,007	36,028						
Teak Poles, &c. ...	2,468	...	646	12	6	0	4	2	per pole.	5,576	7,384	14,624	9	5	and 3 7 4 per cart load.		
Junglewood Poles, &c.	1,790	...	396	9	2	0	3	6	do.	12,523	14,770						
Bamboos (Number) ...	163,004	...	5,022	0	11	30	12	11	per 1,000.	140,095	...	...	...	...	...	...	...
Fibre (Headloads) ...	657	...	159	4	0	0	3	10	per load.	...	...	...	...	...	...	...	...
Green Bamboos (Headloads) ...		...	...	...	...	...	...	...		1,700	...	66	2	2	...	...	...
Total.....	175,179	44,509	18,312	7	8	...	...	...		165,817	68,190	14,690	11	7	..	...	...

78. Statement shewing the timber and bamboos sold at

Description of Wood.	Nagar Division.									Mysore Division.								
	Logs.	Cubical Contents.	Amount realized.			Average Rate per cubic foot.				Logs.	Cubical Contents.	Amount realized.			Average Rate per cubic foot.		
Teak	2,684	16,608	12,218	4	2	0	11	9		1,115	9,489	7,395	10	1	0	12	0
Junglewood ...	4,471	29,850	13,397	15	4	0	7	2		5,096	34,592	10,461	11	5	0	4	10
Teak Poles, &c. ...	2,598	...	1,877	3	3	0	11	6	per pole.	5,920	7,992	3,104	11	0	0	8	0
Junglewood Poles, &c.	1,909	...	1,084	2	5	0	9	1	do.	12,158	16,649	4,039	6	4	0	5	3
Bamboos (Number) ...	175,896	...	10,537	10	8	59	15	8	per 1,000.	144,278	...	3,891	6	10	per pole. 26	15	6
Fibre (Loads) ...	657	...	241	6	0	0	5	10	per load.		...	...	...	...	per 1,000. ...	...	...
Green Bamboos (Loads)	...	...	...	...	...	...	...	...		1,557	...	196	10	9	0	2	0
Total... ..	1,88,215	46,458	39,356	9	10	...	...	...		170,124	68,722	*29,089	8	5	...	...	...

*Besides the above, wood to the value of Rs. 1,576—6—10 was supplied free

Depôts in the Mysore Forest Department during 1875—76.

Hassan Division.				Nundydroog Division.				Total.				
Logs.	Cubical Contents.	Total Cost of felling, carting, &c.	Average Rate per cubic foot.	Logs.	Cubical Contents.	Total Cost of felling, carting, &c	Average Rate per cubic foot.	Logs.	Cubical Contents.	Total Cost of felling, carting, &c.	Average Rate per cubic foot.	REMARKS.
...	...	...	...	...	...	...	...	3,387	18,139			
496	3,012			...	...	...	...	10,292	75,418			
...	...			...	...	...	...	8,014	7,381			
		984 4 6	...									
...	..			...		...	...	14,313	14,770	34,206 12 8	...	
200	...			10,000	...	219 4 11	...	313,299	...			
...	...	...	...	...	...	...	...	657	...			
...	...	...	...	...	...	...	...	1,700	...			
696	3,012	984 4 6	...	10,000	...	219 4 11	...	351,692	115,711	34,206 12 8	...	

Depôts in the Mysore Forest Department during 1875—76.

Hassan Division.				Nundydroog Division.				Total.				
Logs.	Cubical Contents.	Amount realized.	Average Rate per cubic foot.	Logs.	Cubical Contents.	Amount realized.	Average Rate per cubic foot.	Logs.	Cubical Contents.	Amount realized.	Average Rate per cubic foot.	REMARKS.
...	...	...	...	...	..	...	...	3,799	26,097	19,613 14 3	...	
415	2,548	1,563 10 3	0 9 10	9,045	...			19,027	66,990			
51	180	91 4 0	1 12 7	..	...			8,569	8,172			
			per polo.			1,726 13 7	...			51,879 11 6	...	
...	...	...	...	...	...			14,067	16,649			
5,089	...	103 12 5	20 0 0	69,510	...			394,773	...			
			per 1,000.									
...	...	...	...	...	...	...	...	657	...	241 6 0	...	
...	...	...	...	...	...	...	...	1,557	...	196 10 9	...	
5,555	2,728	1,758 10 8	...	78,555	...	1,726 13 7	...	442,449	117,908	71,931 10 6	...	

of charge to His Highness the Maharaja of Mysore.

GENERAL REMARKS.

HEAD I.—FINANCIAL RESULTS.

89. Nagar Division.

Receipts.	Estimates	Actuals.
I. Revenue from Wood.		
1. Brought to depôt by Departmental agency.—		
(a) Timber and bamboos ...	64,000	38,852
(c) Sandalwood	80,000	89,394
2. Wood removed from forests.		
(a) Timber and bamboos ...	800	2,011
(b) Firewood and charcoal ...	...	49
3. From confiscated drift and waif wood	700	858
II. Revenue from Minor Produce.		
1. Grazing dues and sale of grass...	...	2,768
2. Other minor produce ...	32,100	9,282
IV. Miscellaneous.		
1. From fines and forfeitures ...	50	62
2. From refunds to the Department	..	60
3. From other sources ...	350	9,765
Total.....	1,78,000	1,53,101
Deduct Expenditure	70,825	69,144
Balance.....	1,07,175	83,957
Add—		
Outstandings at the close of 1875-76	7,630	
Value of stock at do do ..	17,557	
		25,187
		1,09,144
Deduct—		
Realizations on account of previous years	5,768	
Value of stock at the close of 1874—75	15,506	
		21,274
Net Revenue Rs.....		87,870

Expenditure.	Estimates	Actuals.
A. CONSERVANCY AND WORKS.		
I. Timber Operations.		
1. On wood brought to depôts.—		
(a) Timber and bamboos ...	18,400	18,158
(c) Sandalwood	10,000	10,138
3. On confiscated drift and waif wood	300	46
II. Cost of collecting Minor Produce.		
2. Other forest produce ...	1,000	159
III. Cost of Forest Organization.		
1. Demarcation lines, &c. ...	...	51
IV. Cost of the Treatment and Creation of Forests.		
1. Natural Forests—		
(a) Protection from fire ...	...	272
(c) Improvement and conservation	...	185
2. Artificial Forests—		
(b) Protection from fire ...	60	54
(c) Improvement and conservation	650	22
VII. Works of Utility for the Development of Forests.		
2. Buildings and offices ...	600	43
3. Compensation for land taken up for forest purposes ...	...	8
IX. Cost of Departmental Plants and Tools.		
1. For timber and wood operations	100	210
2. For other purposes ..	...	14
X. Miscellaneous Charges.		
1. Refunds	...	3
3. Other charges	50	29
Total A. Conservancy and Works...	31,150	29,387
B. ESTABLISHMENT.		
I. Salaries	33,975	35,016
Deputation and special allowances	50	...
II. Travelling allowances ...	4,000	3,572
III. Contingencies	1,650	1,169
Total B. Establishment...	39,675	39,757
Total Expenditure...	70,825	69,144

90. Mysore Division.

Receipts.	Estimates.	Actuals.
I. Revenue from Wood.		
1. Brought to depôt by Departmental agency.—		
(a) Timber and bamboos ...	27,100	28,212
(c) Sandalwood	96,000	1,36,263
2. Wood removed from Forests—		
(a) Timber and bamboos ...	500	220
3. From confiscated drift and waif wood	100	37
II. Revenue from Minor Produce.		
2. Other minor produce ...	7,000	11,944
IV. Miscellaneous.		
1. From fines and forfeitures ...	100	196
3. From other sources ...	200	402
Total Rupees...	1,31,000	1,77,374
Deduct Expenditure..	65,500	59,301
Balance..	65,500	1,18,073
Add—		
Outstandings at the close of 1875-76	7,033	...
Value of stock at the close of 1875—76	2,47,102	2,54,135
		3,72,208
Deduct—		
Realizations on account of previous years	362	...
Value of stock at the close of 1874—75	2,10,151	2,10,516
Net Revenue...		1,61,692

Expenditure.	Estimates.	Actuals.
A. Conservancy and Works.		
I Timber Operations.		
1. On wood brought to depôts—		
(a) Timber and Bamboos ...	15,000	14,691
(c) Sandalwood	20,000	16,030
II. Cost of collecting Minor Produce.		
2. Other Forest produce ...	..	285
III. Cost of Forest Organization.		
1 Demarcation lines, &c. ..	600	339
IV. Cost of Treatment and Creation of Forests		
1. Natural Forests—		
(a) Protection from fire ...	1,000	724
(c) Improvement and conservation	800	563
(d) Reboisement	2,200	1,259
2. Artificial Forests—		
(a) Formation .. .	1,000	265
(b) Protection from fire ..	50	235
(c) Improvement and conservation	600	236
(d) Fencing and enclosing ...	100	63
VII. Works of Utility for the Development of Forests.		
1. Roads and bridges	100	44
2. Buildings and offices ...	550	3,349
IX. Cost of Departmental Plants and Tools.		
1. For timber and wood operations	100	14
2. For other purposes ...	200	105
X. Miscellaneous Charges.		
3. Other charges	50	..
Total A Conservancy and Works...	42,350	38,202
B. Establishment.		
I. Salaries	19,150	18,104
Deputation and special allowances.	1,200	...
II. Travelling allowances ...	2,100	2,050
III. Contingencies	700	945
Total B. Establishment...	23,150	21,099
Total Expenditure...	65,500	59,301

91. Hassan Division.

Receipts.	Estimates	Actuals.
I. Revenue from Wood.		
1. Brought to depôt by Departmental agency.—		
(a) Timber and bamboos. ...	2,500	1,762
(b) Firewood and charcoal. ...	...	73
(c) Sandalwood.	50,000	37,264
2. Wood removed from Forests—		
(a) Timber and bamboos. ...	3,350	3,323
(b) Firewood and charcoal. ...	1,500	1,646
3. Confiscated drift and waif wood.	...	190
II. Revenue from Minor Produce.		
1. Grazing dues and sale of grass.	250	510
2. Other minor produce. ...	6,000	6,165
IV. Miscellaneous.		
1. From fines and forfeitures. ...	100	146
2. From refunds to the Department. ...	...	29
3. From other sources. ...	300	60
Total...	64,000	51,168
Deduct Expenditure...	25,865	22,211
Balance...	38,135	28,957
Deduct—		
Realizations on account of previous years	1,553	
Value of stock at the close of 1874—75	23,712	
		25,265
Balance...	...	3,692
Add—		
Outstandings at the close of 1875—76	1,959	
Value of stock at the close of 1875—76	26,416	
		28,375
Net Revenue Rs...		32,067

Expenditure.	Estimates	Actuals.
A. Conservancy and Works.		
I. Timber Operations.		
1. On wood brought to depôts—		
(a) Timber and bamboos. ...	1,600	984
(b) Firewood and charcoal ..	....	24
(c) Sandalwood	6,250	7,981
2. On wood removed from Forests—		
(a) Timber and bamboos ...	1,400	...
(b) Firewood and charcoal ...	400	36
II. Cost of collecting Minor Produce.		
2. Other minor produce ...	50	...
III. Cost of Forest Organization.		
1. Demarcation lines, &c. ...	1,000	93
IV. Cost of Treatment and Creation of Forests.		
1. Natural Forests ...		
(c) Improvement and conservation	200	226
(d) Reboisement	900	452
2. Artifical Forests—		
(a) Formation.	200	110
(b) Protecion from fire. ...	..	1
(c) Improvement and conservation	100	88
VII. Works of Utility, &c.		
1. Roads and bridges ...	1,000	93
2. Buildings and offices ...	750	...
3. Compensation for land taken up	200	...
4. Other charges	...	8
IX. Cost of Departmental Plants and Tools.		
1. For timber and wood operations	500	25
2. For other purposes ...	200	50
X. Miscellaneous Charges.		
3. Other charges	50	28
Total A. Conservancy and Works...	14,800	10,199
B. Establishment.		
I. Salaries	8,425	9,191
Deputation and special allowances ...	240	...
II. Travelling allowances ...	1,900	2,127
III. Contingencies	500	694
Total B. Establishment ...	11,065	12,012
Total Expenditure	25,865	22,211

92. Nundydroog Division.

Receipts	Estimates.	Actuals.
I. Revenue from Wood.		
1. Brought to depôt by Departmental agency		
(a) Timber and bamboos ..	3,000	1,890
(b) Firewood and charcoal ..	..	4
(c) Sandalwood	32,000	40,057
2 Wood removed from Forests		
(a) Timber and bamboos ..	2,000	1,976
(b) Firewood and charcoal ..	2,000	1,696
3. Confiscated drift and waif wood.	...	842
II. Revenue from Minor Produce.		
1. Grazing dues and sale of grass.	300	238
2. Other produce	20,500	24,137
IV. Miscellaneous.		
1. Fines and forfeitures ...	100	181
2. Refunds to the Department ...	.	47
3. From other sources ...	100	3,560
Total.....	60,000	74,628
Deduct Expenditure.....	69,540	65,785
Balance.....	...	8,843
Add—		
Outstandings at close of 1875-76 ..	5,989	
Value of stock at do. ...	1,824	
		7,813
		16,656
Deduct—		
Realizations on account of previous years	22,663	
Value of stock at the commencement of 1874—75 ...	1,640	
		24,303
Net Deficit.....		7,647

Expenditure.	Estimates.	Actuals.
A. Conservancy and Works.		
I. Timber Operations.		
1. On wood brought to depôts	.	
(a) Timber and bamboos ...	1,000	219
(b) Firewood and charcoal ...	...	35
(c) Sandalwood	4,500	4,437
2 (a) Timber and bamboos ...	1,000	...
3. On confiscated wood ...	...	100
III. Forest Organization.		
1. Demarcation lines, &c. ...	1,000	747
2. Working plants ..	500	...
3. Surveys	500	57
IV. Cost of Treatment and Creation of Forests.		
1. Natural Forests		
(a) Protection from fire ...	300	252
(c) Improvement and conservation	2,500	86
(d) Reboisement	8,000	2,371
2. Artificial Forests—		
(a) Formation	19,050	23,979
VII. Works of Utility, &c.		
1. Roads and bridges ...	200	46
3. Compensation of land taken up .	500	...
IX. Cost of Departmental Plants and Tools.		
1. For timber and wood operations	300	245
2. For other purposes ...	300	51
X. Miscellaneous Charges.		
1. Refunds	...	359
3. Other charges	50	...
Total A. Conservancy and Works...	34,700	32,984
B. Establishment.		
I. Salaries	25,400	26,722
Deputation & special allowances	1,440	210
II. Travelling allowances ...	7,000	5,103
III. Contingencies	1,000	766
Total B. Establishment.....	34,840	32,801
Total Expenditure.....	69,540	65,785

93. The financial results are summarized as follows :—

Realizations	4,56,271	
Deduct—		
Amount realized on account of previous years ..	30,346	
Balance ..	4,25,925	
Add—		
Outstandings at the close of the year	22,611	
		4,48,536
Value of the year's transactions.. ..		4,48,536
Disbursements	2,35,292	
Deduct—		
On account of transactions of former years ..	..	
Balance.. ..	2,35,292	
Add—		
Due for transactions during the year under review, but not yet disbursed	..	
		2,35,292
Real cost of the year's transactions ..	..	2,35,292
Value of year's transactions	..	4,48,536
Cost of year's transactions	..	2,35,292
Balance.. ..		2,13,244
Add—		
Difference between the value of stock at the commencement and close of the year		41,887
Net Results of the year.. ..		2,55,131

The cash surplus being Rs. 2,20,979 or Rs. 42,979 more than the estimated surplus.

94. Besides the above the rough estimate of the value of stock remaining at the District-forest depôts amounts to Rs. 20,000. The wood being of smaller description is not valued at the fixed rates.

95. From the statement given in para 78, it will be seen that on timber operations the realizations were Rs. 71,932 against an expenditure of Rs. 34,207.

96. There was an increase of Rs. 63,335 and decrease of Rs. 40,064 in receipts, shewing a total increase of Rs. 23,271. The decrease was chiefly in the Nagar Division where the timber market was very dull, and but a small quantity of large wood could be disposed of. The increase was owing to good selling rates of sandalwood. Under heads I. 2. (a.) 3. and II. 1 and IV. 1. 2. 3. are included the collections by the revenue authorities. Under head II. 2. "other minor produce" an apparent decrease is owing to items hitherto credited to this head being now credited to the proper heads, one of which IV. 3. shews an increase of Rs. 12,837.

97. Under expenditure an increase of Rs. 6,216 and decrease of Rs 26,924; of this latter, Rs. 18,444 under A. and Rs. 8,480 under B. The chief items of the decrease under A. were Rs. 2,164 in collection of sandalwood, the full quantity being got in at rather less than estimated cost; Rs. 2,400 in removal of wood under I. 2 (a); Rs. 1,370 in demarcation not used; and Rs. 4,460 lapsed under "Natural Forest" IV. 1. (c) (d.) Under B. the decrease was chiefly owing to Rs. 3,657 under "deputation and special allowances" and Rs. 3,117 under travelling allowances."

GENERAL REMARKS.

98. Free grants of wood.

Forest Division.	Quantity in cart loads. Wood.	Bamboos.	Value.			Reason for grant made.
Nagar	47	23	321	7	8	Grantees' houses burnt.
Mysore	151½	95	640	6	0	
Hassan	116½	28	419	8	0	
Nundydroog	10	34	61	0	0	
Total.....	325	180	1,442	5	8	

99. The 'groves, avenues and nurseries' returns will be found in the appendix in tabular forms. In groves there are 811,306 trees distributed in 16,293 topes in 12,240 villages. Out of 3,813 miles of road in the Province, 3,615 are planted up with trees at distances varying from 12 feet to 60 feet, and almost throughout on both sides of the road.

100. In Nagar the Deputy Conservator was occupied for a long time in framing an approximate estimates of the value of the forest and forest products which will be swamped should the Madras Irrigation Company ever carry out their great plans. This work the Deputy Conservator did not complete till after the close of the year, but the results are now reported.

101. The area to be submerged (if ever) is 19 square miles of country. Every tree on 114 acres or 6 acres per square mile was counted and classified. Worked out this gave the following:—

Teak.	Number.
1st Class over 72 inches in girth	26
2nd " 60 "	19
3rd " 48 "	52
4th " 36 "	54
5th " 25 "	50
Saplings less than	425
Total....	626

Or 5½ trees per acre.

Other reserved woods	Number.
1st Class over 72 inches in girth	203
2nd " 60 "	130
3rd " 48 "	315
4th " 36 "	519
5th " 25 "	416
Saplings less than "	2,835
Total....	4,418

Or $38\frac{43}{67}$ per acre.

Unreserved trees.	Number.
1st Class over 72 inches in girth	344
2nd " 60 "	284
3rd " 48 "	723
4th " 36 "	1,235
5th " 25 "	1,043
Saplings less than "	13,501
Total....	17,130

Or $150\frac{5}{19}$ per acre.

3,975 clumps of bamboos.
Sandal 7,482 trees.

102. The Lakvalli teak plantation is within the area. It is valued at Rs. 18,279 as it now stands; and the total of the bill is Rs. 39,40,737.

103. *Remarks on Subordinates.*—The officers generally report well of their subordinates. In my own office the Accountant C. Krishna Rao has done much good work, and the Head Writer Mr. S. Chambers and the other employés have all given me satisfaction.

104. *Officers.*—Mr. Daly has again worked well in the plantations. Mr. Jellicoe, Mr Dickinson, Mr. Hutchins, and Mr. King have also worked to my satisfaction in their several charges.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Mysore.

No. 21.—(*Concluded*).

Particulars.	Direction.	Nundydroog Division.	Nagar Division.	Mysore Division.	Hassan Division.	Total.	Remarks.
VIII. Cost of Departmental Cattle.							
1. Purchase of stock		... ...	... ...	... ...	... ...	... ...	
2. Hire of stock		... ...	... ...	... ...	... ...	... ...	
3. Feed and keep of cattle		... ...	... ...	... ...	... ...	... ...	
IX. Cost of Departmental Plants and Tools.							
1. For timber and wood operations		245 8 0	209 6 4	14 4 0	24 11 0	493 13 4	
2. For other purposes		50 12 0	14 3 0	104 14 0	50 0 0	219 13 0	
X. Miscellaneous Charges.							
1. Refunds		359 1 1	2 8 0	... ...	... ...	361 9 1	
2. Law charges		... ...	... ...	... ...	... ...	.. ..	
3. Other charges		... ...	28 12 0	... ...	28 4 2	57 0 2	
Total A, Conservancy and Works.....	... ...	32,983 9 1	29,387 0 3	38,202 6 4	10,198 9 1	1,10,771 8 9	
B. Establishment.							
I. Salaries	15,950 10 11	26,722 3 1	35,015 13 10	18,103 5 2	9,190 15 0	1,04,953 0 0	
Deputation and special allowances	433 5 4	210 0 0	... ...	... ...	... ...	643 5 4	
II. Travelling allowances	1,529 11 11	5,102 14 6	3,572 10 2	2,049 14 10	2,127 6 8	14,382 10 1	
III. Contingencies	937 7 4	766 0 7	1,168 15 1	945 4 2	693 9 5	4,511 4 7	
Total B, Establishment.....	18,851 3 6	32,801 2 2	39,757 7 1	21,098 8 2	12,011 15 1	1,24,520 4 0	
Total Expenditure.....	18,851 3 6	65,784 11 3	69,144 7 4	59,300 14 6	22,210 8 2	2,35,291 12 9	

CONSERVATOR OF FORESTS' OFFICE, MYSORE,
Bangalore, 4th August 1876.

(Checked and countersigned.)

H. HUDSON,
Dy. Acct. General in Mysore.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Mysore.

Government Series. No. 22.
MYSORE FOREST DEPARTMENT.

Annual Abstract Account of the Cash Transactions of the Forest Department in Mysore for the year 1875—76.

Year.	Heads of Account.	Amount.	Year.	Heads of Account.	Amount.
1875—76.	To Cash Balance in hand on 31st March 1875	10,485 9 5	1875—76.	By Expenditure of the Department...	2,34,930 3 8
	„ Revenue received	4,56,270 12 9½		„ Remittances to State Treasuries..	4,56,270 12 9½
	„ Remittances from State Treasuries	2,35,743 7 1		„ Repayments of Advances ..	970 11 8
				„ Refunds of Revenue	361 9 1
				„ Balance outstanding on 31st March 1876	9,966 8 1
	Total Rs.....	7,02,499 13 3½		Total Rs.....	7,02,499 13 3½

(Checked and countersigned)

CONSR. OF FORESTS' OFFICE, MYSORE, *Bangalore, 4th August* 1876

H. HUDSON, *Dy. Acctt. General in Mysore.*

G. J. VAN SOMEREN, CAPTAIN, *Conservator of Forests, Mysore.*

Government Series. No. 23.
MYSORE FOREST DEPARTMENT.

Annual Statement of Outstandings and Liabilities of the Department on account of Contractors and Disbursers for the year 1875—76.

Division.	Departmental Debtor: At the commencement of the year.	Departmental Debtor: Recoveries in cash and in work done during the year.	Departmental Debtor: At close of the year.	Departmental Creditor: At the commencement of the year.	Departmental Creditor: Payments made during the year.	Departmental Creditor: At close of the year.	Balance due: To Department Outstandings.	Balance due: By Department Liabilities.
Nundydroog Division ...	...	6,887 10 1	6,887 10 1	1,931 1 2	6,247 12 0	8,178 13 2	1,291 3 1	...
Do Plantations ..	...	26,350 0 2	26,350 0 2	0 0 2	26,350 0 0	26,350 0 2	...	...
Nagar Division	...	29,486 11 1	29,486 11 1	4,036 11 7	29,282 7 4	33,319 2 11	3,852 7 10	...
Mysore „	...	38,433 0 4	38,433 0 4	1,541 12 8	38,579 14 2	40,121 10 10	1,688 10 6	...
Hassan „	..	10,243 5 8	10,243 5 8	2,975 15 10	10,401 8 6	13,377 8 4	3,134 2 8	...
Total	...	1,11,380 11 4	1,11,380 11 4	10,485 9 5	1,10,961 10 0	1,21,347 4 5	9,966 8 1	...

Government Series. No. 28.
MYSORE FOREST DEPARTMENT.

Annual Account of Forest Revenue for 1875—76.

Receipts.	Amount.	Disbursements.	Amount.
Amount of revenue realized in 1875-76.	4,56,270 12 9½	Amount disbursed in 1875—76 ...	2,35,291 12 9
Deduct amount realized on account of previous years	30,345 8 6	Deduct amount disbursed on account of transactions of former years ...	... ...
		Balance.....	2,35,291 12 9
Balance.....	4,25,925 4 3½	Add amount due for transactions during the year under review, but not yet disbursed...	... ...
Add outstandings on account of the year.	22,611 4 5½		
Value of the year's transactions.....	4,48,536 8 9	Real cost of the year's transactions	2,35,291 12 9

Value of the year's transactions	4,48,536 8 9
Cost of the year's transactions	2,35,291 12 9
Balance.....	2,13,244 12 0
Add difference between the value of stock at the commencement and close of the year	41,887 0 0
Net Results of the year.....	2,55,131 12 0

N. B.—Besides the above the value of stock remaining at District Forest Depôts amounts to Rs. 20,000.

CONSERVATOR OF FORESTS' OFFICE, MYSORE, *Bangalore, 15th August* 1876.

G. J. VAN SOMEREN, CAPTAIN, *Conservator of Forests, Mysore.*

MYSORE FOREST DEPARTMENT.

Stock Account of Quantities and Value of Timber and other Forest Produce at the commencement and close of the year 1875—76 at Depôts other than District Forests.

Description.	In Depôts on 1st April 1875.		Add received during 1875—76.		Deduct issued or sold during 1875—76.					Remaining in Stock on 31st March 1876.		Remarks.
	Quantity.	Probable Value.	Quantity.	Probable Value.	Quantity.	Probable Value.	Amount actually realized.	Difference. Profit.	Difference. Loss.	Quantity.	Probable Value.	
					Timber.							
Nagar. Teak ...	382	4,966 0 0	409	5,317 0 0	384	4,992 0 0	6,763 12 2	1,771 12 2	... ...	407	5,291 0 0	
Nagar. Junglewood ..	510	5,100 0 0	18	180 0 0	74	740 0 0	1,216 14 1	476 14 1	... ...	454	4,540 0 0	
Nagar. Teak and Junglewood poles ...	...	... ...	518	518 0 0	...	... ...	... ...	... ...	... ...	518	518 0 0	
Nagar. Bamboos ...	...	... ...	16,845	336 0 0	16,399	328 0 0	1,673 3 7	1,345 3 7	... ...	446	8 0 0	
Nagar. Fibre Cart-loads.	...	... ...	577	216 6 0	577	216 6 0	216 6 0	... ...	... ...	..	... ...	
Total.....	892	10,066 0 0	18,367	6,567 6 0	17,434	6,276 6 0	9,870 3 10	3,593 13 10	... ...	1,825	10,357 0 0	
Mysore. Teak ...	1,188	15,444 0 0	78	1,014 0 0	175	2,275 0 0	5,011 15 9	2,736 15 9	... ...	1,091	14,683 0 0	
Mysore. Junglewood ...	420	4,200 0 0	23	230 0 0	117	1,170 0 0	2,274 8 0	1,104 8 0	... ...	326	3,260 0 0	
Mysore. Blackwood ...	16	160 0 0	1	10 0 0	9	90 0 0	184 1 5	94 1 5	... ...	8	80 0 0	
Mysore. Teak poles ...	186	186 0 0	200	200 0 0	161	161 0 0	151 5 0	... ...	9 11 0	225	225 0 0	
Mysore. Bamboos ...	1,022	20 0 0	4,150	83 0 0	274	5 0 0	3 12 0	... ...	1 4 0	4,898	98 0 0	
Total.....	2,832	20,010 0 0	4,452	1,537 0 0	736	3,701 0 0	*7,625 10 2	3,935 9 2	10 15 0	6,548	17,846 0 0	* This sum excludes Rupees 1,077—8—1 being the value of 261 teak sleepers sold during the year, and Rupees 585--15--3 value of wood sold in the State Forests.
Nundydroog. Junglewood ...	36	360 0 0	...	... ...	...	... ...	...	... ...	... ...	36	360 0 0	
Total.....	36	360 0 0	...	... ...	...	... ...	...	... ...	... ...	36	360 0 0	
Total Timber.....	3,760	30,436 0 0	22,819	8,104 6 0	18,170	9,977 6 0	17,495 14 0	7,529 7 0	10 15 0	8,409	28,563 0 0	

Sandalwood.

Nagar.	Good wood ...	17	5,440	0	0	206¾	66,160	0	0	201¼	64,400	0	0	86,239	7	0	21,839	7	0	...	...	...	22½	7,200	0	0
	Inferior do ...	...	...	...	...	54¼	1,736	0	0	54¼	1,736	0	0	1,502	4	0	...	...	...	233	12	0	...	...	...	...
Mysore.	Good wood ...	591	1,89,120	0	0	508	1,62,560	0	0	383½	1,22,720	0	0	1,36,147	11	2	13,427	11	2	...	...	...	715½	2,28,960	0	0
	Inferior do ...	32	1,024	0	0	24	768	0	0	46¾	1,496	0	0	215	7	5	...	...	...	1,280	8	7	9¼	296	0	0
Hassan.	Good wood ...	73	23,360	0	0	118½	37,920	0	0	109¼	34,960	0	0	36,817	8	2	1,857	8	2	...	...	...	82¼	26,320	0	0
	Inferior do ...	11	352	0	0	33¼	1,064	0	0	41¼	1,320	0	0	446	14	9	...	...	...	873	1	3	3	96	0	0
Nundydroog.	Good wood ...	4	1,280	0	0	86¾	27,760	0	0	87	27,840	0	0	25,666	2	7	...	...	...	2,173	13	5	3¾	1,200	0	0
	Inferior do ...	...	...	...	...	23½	752	0	0	15¼	488	0	0	96	12	0	...	...	...	391	4	0	8¼	264	0	0
Total Sandalwood.....		728	2,20,576	0	0	1,055	2,98,720	0	0	938½	2,54,960	0	0	2,87,132	3	1	37,124	10	4	4,952	7	3	844½	2,64,336	0	0
Grand Total		4,488	2,51,012	0	0	23,874	3,06,824	6	0	19,108½	2,64,937	6	0	3,04,628	1	1	44,654	1	4	4,963	6	3	9,253½	2,92,899	0	0

CONSERVATOR OF FORESTS' OFFICE, MYSORE,

Bangalore, 15th August 1876.

G. J. VAN SOMEREN, CAPTAIN,

Conservator of Forests. Mysore.

Statement shewing Expenditure incurred on account of Plantations

Division.	Names of Plantations.	Previous area planted.	Area planted in 1874-75.	Area planted in 1875-76.	Total area planted.	Previous cost of formation and maintenance.	Cost of formation and maintenance on area planted in 1874—75.	Cost of formation on area planted in 1875-76.	Total cost of formation and maintenance on the whole area planted.
Nagar.	1 Lakvalli (Teak) ...	15	...	...	15	876 0 0	21 0 0	11 0 0	908 0 0
	2 Sakrebail ...	30	...	...	30	2,904 0 0	24 0 0	10 0 0	2,938 0 0
	3 Hebbe ...	9¼	...	...	9¼	901 0 0	19 0 0	8 0 0	928 0 0
	4 Alkol (Sandal) ...	71	...	...	71	739 0 0	82 0 0	36 0 0	857 0 0
	5 Anapankatte ...	237	...	...	237	617 0 0	244 0 0	158 0 0	1,019 0 0
	6 Santavari (exotic) ...	4¼	...	...	4¼	1,032 0 0	17 0 0	4 0 0	1,053 0 0
Mysore.	7 Kakankote (Teak) ...	93	...	...	93	4,516 0 0	1,383 0 0	546 0 0	6,445 0 0
	8 Mastiguddi (do) ...	...	11	50	61	130 0 0	834 0 0	1,159 0 0	2,123 0 0
	9 Gurapur (Sandal) ...	55	...	..	55	2,304 0 0	398 0 0	250 0 0	2,952 0 0
	10 Nayihalla (Sandal) ...	...	...	46	46	... 0 0	... ...	470 0 0	470 0 0
	11 Karepur ...	5	...	...	5	202 0 0	... ...	... ...	202 0 0
Nundydroog.	12 Kumbarhalli (Timber)	177	64	93	334	4,946 0 0	1,769 0 0	2,370 0 0	9,085 0 0
	13 Maddagiri ...	25	38	...	63	1,023 0 0	637 0 0	200 0 0	1,869 0 0
	14 Chota and Bara Hosahardi ...	126	99	152	377	6,198 0 0	2,567 0 0	3,846 0 0	12,611 0 0
	15 Jadiganhalli ...	52½	53	91½	197	2,290 0 0	1,046 0 0	2,065 0 0	5,401 0 0
	16 Nellal ...	80	80	84	244	2,305 0 0	1,701 0 0	2,588 0 0	6,594 0 0
	17 Kadgodi ...	43	70	147	260	1,550 0 0	2,216 0 0	3,126 0 0	6,892 0 0
	18 Kumalgod ...	60	47	60	167	5,062 0 0	753 0 0	1,434 0 0	7,249 0 0
	19 Kurandhalli ...	131	48	84	263	1,620 0 0	1,209 0 0	1,765 0 0	4,594 0 0
	20 Karapanhalli ...	53	50	36	139	2,185 0 0	1,491 0 0	1,742 0 0	5,418 0 0
	21 Marsandra ..	89	118	115	322	2,669 0 0	1,578 0 0	2,635 0 0	6,882 0 0
	22 Appasandra ...	103	62	99	264	3,140 0 0	1,377 0 0	2,218 0 0	6,735 0 0
	23 Hennur ..	..	...	...	...	101 0 0	8 0 0	15 0 0	124 0 0
	24 Nundydroog (Avenues)	...	...	...	...	324 0 0	... ...	... ...	324 0 0
	Supervising Establishment in the Nundydroog Division ...	...	...	...	...	723 0 0	117 0 0	143 0 0	983 0 0
	Collection of seed and sundry charges ...	...	...	...	...	3,120 0 0	810 0 0	2,616 0 0	6,546 0 0
	Total.....	1,459	740	1,057½	3,256½	51,477 0 0	20,301 0 0	29,424 0 0	1,01,202 0 0

CONSERVATOR OF FORESTS' OFFICE, MYSORE,
Bangalore, 12*th August* 1876.

in Mysore, up to close of official year 1875—76.

Amount realized on crops in previous years.	Amount realized on crops in 1874—75.	Amount realized on crops in 1875—76.	Total amount realized on crops.	Total net cost of area planted, formation and maintenance.	Average cost per acre for formation. In previous years.	Average cost per acre for formation. In 1875—76.	Average cost per acre for formation in 1875-76.	Average cost per acre for formation and maintenance on whole area planted.
...	...	...	...	908 0 0	...	...	...	60 8 6
...	...	...	...	2,936 0 0	...	...	...	97 14 11
...	...	...	...	928 0 0	...	...	...	100 5 2
...	...	...	...	857 0 0	...	...	...	12 1 1
...	...	...	...	1,019 0 0	...	...	...	4 4 9
...	...	...	...	1,053 0 0	...	...	...	247 12 4
76 7 4	14 0 0	...	90 7 4	6,445 0 0	...	...	...	69 4 9
...	...	...	...	2,123 0 0	...	...	23 2 10	34 12 10
35 8	...	...	35 8 0	2,952 0 0	...	...	...	53 10 9
...	...	...	...	470 0 0	...	...	10 3 6	10 3 6
...	...	...	...	202 0 0	...	...	...	40 6 4
...	...	...	...	9,085 0 0	...	...	25 7 9	27 3 2
...	...	...	...	1,869 0 0	...	...	...	29 10 7
...	...	...	...	12,611 0 0	...	...	25 4 10	33 7 2
...	...	...	...	5,401 0 0	...	...	22 9 1	27 6 7
...	...	...	...	6,594 0 0	...	...	30 12 11	27 0 5
174 15 10	...	...	174 15 10	6,892 0 0	...	...	21 4 3	26 8 1
...	...	...	...	7,249 0 0	...	...	23 14 4	43 6 6
...	...	...	...	4,594 0 0	...	...	21 0 2	17 7 6
...	...	...	...	5,419 0 0	...	...	48 6 2	38 15 8
...	...	...	...	6,882 0 0	...	...	22 14 7	21 5 11
...	...	...	...	6,735 0 0	...	...	22 6 5	25 8 2
...	...	...	...	124 0 0	...	...	...	...
...	...	...	...	324 0 0	...	...	...	...
...	...	...	...	983 0 0	...	...	...	...
...	...	...	...	6,546 0 0	...	...	...	...
286 15 2	14 0 0	...	300 15 2	1,01,202 0 0	...	...	...	...

G. J. VAN SOMEREN, CAPTAIN.,
Conservator of Forests, Mysore.

Comparative Statement shewing the Quantity of Sandalwood received and sold during 1873—74, 1874—75 *and* 1875—76.

Description of wood.	Collections in tons. 1873—74.	1874—75.	1875—76.	Estimates, 1876—77	Sales in tons. 1873—74.	1874—75.	1875—76.	Estimates for 1876—77.	Remarks.
Billets, &c. ...	738¼	626	739½	900	640⅞	369	557¼	900	The distinction between billets, roots and inferior wood, is not made until the wood is received, dressed, and classified at the depôts. Hence the estimated quantity given in totals
Roots ...	209¾	173	180½		197⅛	145	208½		
Inferior wood..	160	110¾	135		138	136¾	157¼		
Total.....	1,108	909¼	1,055	900	976	650¾	923	900	

Avenues' Return for 1875—76 *for the Province of Mysore.*

1	2	3	4	5	6	7	8	9
District.	Taluks.	Number of Miles of Road in District	Number of Miles planted up to 31st March 187 .	To be planted up.	Cost of pitting and planting	Cost of watering.	Total Cost.	Remarks.
		M. F. Y.	M. F. Y.	M F. Y.				
Bangalore ..	Nine.	497 0 96	496 6 60	0 2 36	0 0 0	0 0 0	0 0 0	
Túmkúr ...	Eight.	475 0 0	475 0 0	0 0 0	0 0 0	0 0 0	0 0 0	Planted on both sides. Blanks to be filled up.
Kolar ..	Ten.	438 0 0	408 0 0	30 0 0	0 0 0	0 0 0	0 0 0	Planted on both sides at distances from 18—30 feet Blanks to be filled up
Hassan ...	Nine.	660 0 0	649 0 0	11 0 0	0 0 0	0 0 0	0 0 0	Planted on both sides, from 24—60 feet apart.
Mysore ..	Eleven.	648 0 0	563 0 0	85 0 0	0 0 0	0 0 0	0 0 0	Planted on both sides, from 12—60 feet. A few blanks to be filled up.
Shimoga ...	Eight.	388 0 0	350 0 0	38 0 0	0 0 0	86 3 1	86 3 1	157cuttings, 3 002 seedlings put out during year, 4,082 blanks to be filled up.
Kadur ...	Five.	306 0 0	285 0 0	21 0 0	0 0 0	0 0 0	394 2 6	
Chitaldroog.	Eight.	401 0 0	389 0 0	12 0 0	2 0 0	663 13 11	665 13 11	Planted on both sides, from 15—30 feet apart.
Total.....	Sixty-eight.	3,813 0 96	3,615 6 60	197 2 36	2 0 0	750 1 0	1,146 3 6	

Compiled from Returns sent in by Deputy Commissioners.

CONSERVATOR OF FORESTS' OFFICE, MYSORE,
Bangalore, 12th August 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Mysore.

Return of Groves for 1875—76, *for the Province of Mysore.*

1	2	3	4	5	6	7	8	9	10	11		12	13	14	15
District.	Taluks.	Number of Trees in Groves on 31st March 1875.	Area in acres planted on 31st March 1875.	Number of Topes.	Number of Villages over which Topes are distributed.	Areas in acres on 31st March 1876.	At what distance apart.	Description of Trees planted out during 1875—76.	Transplants or seed sown on spot.	Area in acres. Pits.	Ridges	Cost of pitting or ridging.	Cost of watering.	Total Cost.	Remarks.
							Feet.								
Bangalore ...	Nine ...	107,444	1,805	1,989	1,969	1,806	6—48	Mango, Bassia, Jack, Eugenia. Jambolana, Pongonia ...	Both.	22½	46⅔	... ...	... ...	... ...	
Túmkúr ...	Eight ..	81,181	1,451	3,337	2,133	1,451	3—18	Do ...	...	...		.. ..	... ...	... ...	
Kolar	Ten ...	334,513	6,578	5,231	2,705	7,428	12—30	Do and Tamarind Ficus, Terminalia and others.	Transplants.	...	...	... ...	... ...	... ...	16,168 trees put out during year.
Hassan	Nine ...	122,608	1,196	2,236	2,190	*...	*...	* .	...	...	..	... ...	... ...	... ...	*Information not given by Deputy Commissioner.
Mysore ...	.. Eleven ...	93,628	2,299	1,921	1,604	2,299	...	Do ...	...	...	...	... ...	... ...	... ...	
Shimoga	.. Eight ..	8,990	158	*...	*...	*...	18—30	Do ...	...	...	...	.. ..	... ...	... ...	*Do
Kadur ...	... Five ...	31,124	555	642	640	555	*...	Do ...	...	...	...	... ...	... ...	... ...	*Do
Chitaldroog	... Eight ...	31,818	837	937	999	837	...	...	...	...	...	23 5 0	86 0 0	109 5 0	
Totals.....	Sixty-eight.	811,306	14,879	16,293	12,240	14,376	...	...	...	...	...	23 5 0	86 0 0	109 5 0	

Compiled from Returns sent in by Deputy Commissioners.

CONSERVATOR OF FORESTS' OFFICE, MYSORE,
Bangalore, 12th August 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Mysore.

Nursery Return for 1875—76, *for the Province of Mysore.*

1	2	3		4		5	6	7	8	9	10
District.	Taluks	Number of Nurseries and Total Area in Acres.		Size of smallest and of largest Nursery.		Names of Seeds sown in Nurseries	Number of Seedlings placed out at 9 inches apart and ready for distribution	Number used for Government Avenues and Groves.	Number distributed free.	Total Cost.	Remarks.
Bangalore	... Nine ...		..		...	...	...	...	..	...	
Túmkúr	... Eight ...		1	4 yards.		Carob	3	...	...	...	
Kolar	... Ten ...		...		...	..	...	...	...	...	
Hassan	.. Nine ...		...		...	...	...	...	...	...	
Mysore	.. Eleven ...		...		...	..	...	...	...	...	
Shimoga	... Eight ...		...		..	...	...	..	...	..	
		No.	Yds	Yds.	Yds						
Kadur	... Five ...	3—11	170	30	94	Jamun, Bassia	1,350	350	300	...	
Chitaldroog	... Eight ...		...		...	...	...	...	...	...	
Totals.....	Sixty-eight ...	4—	174 Yds	4 yards. 94 yards.		...	1,353	350	300	...	

Compiled from Returns sent in by Deputy Commissioners

CONSERVATOR OF FORESTS' OFFICE, MYSORE,
Bangalore, 12th August 1876.

G. J. VAN SOMEREN, CAPTAIN,
Conservator of Forests, Mysore.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN THE

PROVINCE OF MYSORE,

FOR

1875—1876.

By CAPTAIN G. J. VAN SOMEREN,
CONSERVATOR OF FORESTS.

REVIEW BY THE CHIEF COMMISSIONER.

The number and extent of the State forests remained unaltered during the year.

State Forests

2. The question of closing the forests in Sorab, Honnali and Shikarpur will be disposed of on receipt of definite proposals from the Conservator, and submission of the revised list of Sorab forests called for in this Office No. 646—23, dated 26th April 1875.

3. The condition of boundary lines of State forests with the exception of Handigundi-betta in Nundydroog Division is generally good. The Conservator has not stated the length of boundary lines that have already been completed and what still remains to be completed in the several forests, and he is requested to furnish this information in his future reports.

4. The Tegurgudda, Basankote and Ubrani forests in the Nagar Division are reported to have not been demarcated as yet. The work should be commenced at once as the forests in question are becoming more valuable from the formation of new roads in the neighbourhood.

5. The State forests in the Mysore Range are stated to require rest, and it is satisfactory to note that the annual yield has been reduced in 12 years from 26,775 to 3,403 cubic feet of teak and from 12,779 to 3,820 c. ft. of junglewood. The Conservator's proposal to introduce the felling by the *coupe* system as an experiment is approved. The growth of bamboos in these forests is stated to interfere much with the growth of teak and other trees, though this opinion is not shared by some of the Officers of the Forest Department.

Demarcation.

6. It is unsatisfactory to find that no new work appears to have been done in the State forests. In the Mysore and Nundydroog Ranges the work was limited to a clearance of 19 and 74 miles of old lines at a cost of Rs. 214 and 747, respectively. In Hassan, a small forest (Hiple) measuring 208 acres was demarcated at a cost of Rs. 14—8—0; and 7 miles 5 furlongs of demarcation lines were cut in the Viziyapur Kaval, the cost of which has not been stated.

7. The Conservator proposes to plant casuarinas along demarcation lines to serve as boundary pillars. This may be tried as an experimental measure.

8. There were 354 cases of breaches of Forest Rules in which 745 persons were concerned. In 309 cases, the accused numbering 593 persons were convicted, while 2 cases involving 3 persons were pending at the close of the year.

Breaches of Forest Rules.

9. A sum of Rs. 189 was spent towards the improvement and repair of forest roads, &c.

Improvement and Extension of State Forests.

10. The results reported under this head are not very satisfactory. About 4 sqr. miles of the settled portion of Sakrebail forest in Nagar and the Davaraydurga forest in Nundydroog were successfully protected against fire, while the operations in the Ainur Marigiddi forest proved unsuccessful, and portions of Shankar, Begur and Nundydroog forests were burnt. The total area protected during the year was 20,480 acres which cost Rs. 751. The Conservator reports that more extensive measures will be adopted during the current year, and a total area of about 90,000 will be brought under protection.

Protection from Fire.

11. The list of plantations appended to para 37 of the Conservator's report contains two additional names, *viz.*, No. 5 Mastiguddi (Teak), which in the last year's report was included in No. 4 Kakankote (Teak), and No. 12 Nayihalla (Sandal) which is a new plantation.

Plantations.

12. The total number and extent of the various plantations at the close of the year under review may be classified as follows:—

		Acres.
5	Teak plantations	208¼
5	Sandalwood	414
2	Timber	397
9	Fuel	2,233
1	Of Exotic	4¼
22		3,256¾

13. During the year under review 1,057½ acres were planted at a total cost of Rs. 29,424 as against 740 acres in the previous year. The cost per acre amounted to Rs. 27—13—1 as against Rs. 27—6—11 in 1874—75. The out-turn of the work was on the whole satisfactory.

14. The condition of the five teak plantations, with the exception of Hebbe and a portion of Kakankote, was good. The Lakvalli and Sakrebail plantations were protected from fire, while Kakankote was burnt, the loss sustained being however inconsiderable. Of the two timber plantations, Maddagiri was doing fairly well, while Kumbarhalli suffered from want of supervision. Of the five sandal plantations, Alkol and Annappanakatte were improved, while the young plants in Nayihalla, in which 46 acres had been sown, suffered for want of rain. The Gurapur plantation was again burnt, while Karepur was abandoned. All the fuel plantations in Nundydroog suffered more or less from want of rain, the average percentage of failures in the year's first planting after deducting the vacancies which had been filled up, being between 14 and 15 per cent.

15. The experiments made with carob, mahogany, cloves, and sâl seeds appear hopeful. It is observed that the seed sown of the Red Saunders (*pterocarpus santalinus*) has not germinated. The Conservator's proposal to make further experiment with this valuable tree is approved.

Experiments

16. The fellins during the year are shewn below:—

Actual Yield of Forests, Disposal of Timber, &c.

Teak logs	5,889 logs. 2,633 c. ft.
Junglewood logs	24,647 logs. 47,792 c. ft.
Teak poles	582
Junglewood poles	1,847
Bamboos	330,178
Fibre loads	657

of which the quantity felled in State Forests was :—

Teak logs	487 logs. 1,587 c. ft.
Junglewood logs	42 logs. 205 c. ft.
Teak poles	718 logs. 200 c. ft.
Bamboos	20,995
Fibre loads	577

the rest of the felling being in District forests.

17. The collections during the year were as follows :—

Teak logs	3,887 logs. 18,139 c. ft.
Junglewood logs	10,292 logs. 75,418 c. ft.
Teak poles	8,044 logs. 7,384 c. ft.
Junglewood poles	14,313 logs. 14,770 c. ft.
Bamboos	313,299
Fibre loads	657
Green bamboos	1,700

the total cost of felling and carting being Rs. 34,206—12—8.

18. The sales were of—

Teak logs	3,799 logs. 26,097 c. ft.
Junglewood logs	19,027 logs. 66,990 c. ft.
Teak poles	8,569 logs. 8,172 c. ft.
Junglewood poles	14,067 logs. 16,649 c. ft.
Bamboos	394,773
Fibre loads..	657
Green bamboos, loads	1,557

the total realization being Rs. 71,932 or Rs. 11,740 less than in the previous year, which was chiefly owing to poor sales in Nagar, where the realizations during the year only amounted to Rs. 39,357 as against Rs. 52,707 in 1874—75, shewing a decrease of Rs. 13,350.

19. In addition to the above, wood to the value of Rs. 1,576—6—10 was supplied free of charge to His Highness the Maharaja of Mysore.

Sandalwood.

20. The collection of sandalwood amounted to 920 tons of good and 135 tons of inferior wood, as against 799 and 110¼ respectively in the previous year. The cost of collection in the Hassan Range was Rs. 51-8-0 per ton in 1874-75 and Rs. 52—9—5 in the year under review, as against Rs. 35—9—8 only in 1873-74. The cause for the apparent increase in the rates has not been explained.

21. The sales during the year aggregated 765¾ tons of good and 157¼ tons of inferior wood, which realized Rs. 2,84,870—12—11 and Rs. 2,261—6—2 respectively, as contrasted with 445 tons of good and 165¾ tons of inferior wood, which realized Rs. 2,04,507 and Rs. 3,947 respectively in the previous year. The rate realized for billet in the Nundydroog Range, *viz.*, Rs. 286 per ton, was very low when compared. with the rates realized in other ranges which varied from Rs. 405 to Rs. 322 per ton. The rate realized for inferior wood in the Hassan Range was also very low, *viz.* Rs. 4-9-9 per ton as against Rs. 30—1—4 in the previous year. The Conservator is requested to account for these results so far as any enquiry instituted by him on the subject may enable him to do so.

22. The total realizations from sandalwood amounted to Rs. 2,87,132—3—1 as against Rs. 2,08,454 in the previous year, shewing an increase of Rs. 78,678 which was due to a larger quantity having been sold.

23. The financial results of the District-Forest scheme were on the whole satisfactory, showing a profit of Rs. 15,257 as against Rs. 14,339 in the previous year. The expenditure in Hassan exceeded the receipts by Rs. 572 which is attributed to the poverty of the forests. The result of the experiment which is now being tried of importing wood from Coorg will be awaited.

District Forests.

24. The Chief Commissioner regrets to learn that the privileges conceded to ryots in the matter of free grants of wood for agricultural purposes are still abused. The attention of Deputy Commissioners of Districts will be drawn to the point noticed by Captain van Someren in para 85 of his report, and it is hoped that with the co-operation and assistance of Revenue Officers clandestine cutting and removal of wood will be prevented.

25. The actuals under "Receipts" exceeded the estimates by Rs. 23,270—12—9, while those under expenditure fell short of the estimates by Rs. 20,708—3—3. The cause of the increases and decreases in the several items under both these heads has already been explained in the letter to the Government of India, submitting the annual statement of receipts and expenditure for 1875—76.

Financial Results.

26. The general financial results may be summarized as follows :—

Realizations	4,56,271	
Deduct—		
Amount realzied on account of previous years ..	30,346	
Balance..	4,25,925	
Add—		
Outstandings at the close of the year ..	22,611	
Value of the year's transactions ..		4,48,536
Disbursements	2,35,292	
Deduct—		
On account of transactions of former years ..	..	
Balance..	2,35,292	
Add—		
Due for transactions during the year under review, but not yet disbursed ..	..	2,35,292
Real cost of the year's transactions ..		2,35,292
Value of year's transactions		4,48,536
Cost of year's transactions		2,35,292
Balance .		213,244
Add—		
Difference between the value of stock at the commencement and close of the year ..		41,887
Net Results of the year..		2,55,131

The above exhibits an increase in the estimated surplus of Rs. 43,979 and of Rs. 29,852 on the net revenue of the previous year.

27. Besides the above, the rough estimate of the value of stock remaining at the District Forest depôts amounted to Rs. 20,000; and the Department is also entitled to credit for the value, Rs. 1,576—6—10, of wood supplied to the Palace at Mysore free of charge.

28. The value of the free grant of wood and bamboos made to ryots for the reconstruction of their houses destroyed by fire amounted to Rs. 1,442—5—8 as against Rs. 798—11—0 in the previous year. The circumstances of each case were duly considered before the grant was sanctioned.

Free Grants of Wood.

29. In groves there are 811,306 trees distributed in 16,293 topes in 12,240 villages, and that out of 3,813 miles of road in the Province 3,615 miles are planted up with trees at distances from each other varying from 12 to 60 feet and almost throughout on both sides of the road. These figures compared with those given in the previous year's report shew an increase of 5,233 trees in groves and of 40 miles of road planted up with trees on both sides.

Groves, Avenues and Nurseries.

30. The area of forest land which will be submerged, if the Madras Irrigation Company carry out their scheme of irrigation, is stated to be 19 square miles, the value of which is estimated at Rs. 39,40,737, including the Lakvalli teak plantation situated within the said area, which is valued at Rs. 18,279. A separate report has been submitted on this point to the Government of India.

31. The Chief Commissioner observes that the Officers who are selected for special notice are Messrs. Daly, Jellicoe, Dickinson, Hutchins and King. Mr. Saunders' thanks are also due to the Conservator for the services rendered by him in supervising the working of the Forest Department.

"By Order,"

T. CLARKE,

Offg. Secretary.

BANGALORE,
23rd September 1876.

No. 167.

FROM

G. H. M. BATTEN, ESQ.,

Officiating Secretary to the Government of India,

To

THE CHIEF COMMISSIONER OF MYSORE.

Dept. of Revenue, Agriculture, and Commerce.

Forests.

Calcutta, the 3rd February 1877.

SIR,

I AM directed to acknowledge the receipt of your letter No. 6696-84, dated the 7th October last, forwarding the Annual Progress Report of the Forest Department in Mysore for 1875-76, and to communicate the following observations and orders thereon.

2. It is reported that the number and extent of the State forests remained unaltered during the year, but it is evident that much remains to be done before they can be said to be in good condition, completely demarcated and protected, so as to be capable of producing a sufficient yield of timber and other forest produce to satisfy the requirements of the country. This, as explained in paragraph 6 of the orders on the report for 1874-75 contained in this office letter No. 182, dated 2nd March 1876, is the first aim towards which the Conservator must direct his operations.

3. From the reports for 1873-74 and 1874-75 it was not understood that the demarcation of the reserved forests was still incomplete; but from paragraph 2 of your review it would appear that the closing and final demarcation of the forests in Sorab, Honnali and Shikarpur has been delayed. It is observed from your proceedings for November 1876 that the Conservator explains that this delay is due to no definite reply having been received from the Commissioner of the Naga Division to a communication addressed to him in November 1875.

4. Having regard to the definite orders issued on this subject as long ago as February 1875 in the letter from this Department No. 222, dated 25th February 1875, the delay in effecting the demarcation of the forests mentioned in paragraphs 9 to 12 of the Conservator's report is unsatisfactory, and the Governor-General in Council trusts that the report for the current year will show better progress in this respect. The area of the State forests in Mysore is only 449¼ square miles, a little more than one-half of the area of the Oudh forests, and altogether insignificant compared with the area in the Central Provinces extending to 2,332 square miles, and in Bengal to 2,585 square miles. Many of the Mysore State forests are so small, that their management can never be profitable, and therefore if in course of demarcation opportunities should offer to increase their area, this should be done.

5. In fire protection some progress is recorded in paragraph 34 of the Conservator's report, but it is insignificant; and I am directed to repeat the suggestion made in paragraph 7 of the letter from this office No. 222 of the 25th February 1875, that Captain VanSomeren should visit some of the forests in the Central Provinces and Berar, which have now been protected from fire for a series of years, in order to profit by the experience gained by Captain Doveton and Mr. Drysdale. In this work Forest administration in Mysore appears to be behind other provinces.

6. The detailed account of the plantations given in paragraphs 37 to 73 of the report has been read with interest. The drawback to these operations in Mysore is, that in many cases the areas available for planting are small, and that hence the work is distributed over a number of small detached plots which makes supervision difficult and expensive. The cost per acre has been reduced, but is still high.

7. The fellings in the State and district forests are clearly stated in paragraph 16 of your review, and it is satisfactory that in the State forests the fellings have been steadily reduced. As long as no more timber is cut in these forests than what is recorded in last year's report, no damage is likely to be done, provided the cuttings are judiciously distributed.

8. The statements showing the yield of the forests, which are recorded in paragraphs 76 to 78 of the Conservator's report, are clearer and more useful than those given in former reports, but they are still capable of considerable improvement. In paragraph 5 of the letter No. 182, dated the 2nd March 1876, it was explained that a clear statement of the teak and other valuable trees felled in the reserves should be submitted with each annual report.

It ought not to be difficult to prepare such a statement, showing separately the cuttings made in district forests and those made in State forests. The columns in the form entered in paragraph 76 might be reversed, the initial columns being used for the classes of wood and other forest produce, while the names of the divisions of the district forests and of the State forests in which cuttings are made would be entered in horizontal lines in due order.

9. By comparing the data given in paragraphs 77 and 78 with those recorded in paragraphs 82 and 83 of the report, it is concluded that the receipts and charges of these timber operations in district forests have been as follows:—

	Receipts.	Charges.
In district and State forests (paragraph 77) . .	71,931	34,206
In district forests alone (paragraph 83) . . .	52,771	37,514

If these statements are correctly understood, it would appear that the difference should represent the receipts and charges on account of the timber, bamboos, and other produce brought from the State forests. But there is this difficulty, that the charges on account of both classes of forests are given at Rs. 3,368 less than those on account of the district forests alone. This requires explanation, which should be furnished.

10. From paragraph 85 of the Conservator's report it is understood that in some parts of the country at least the district forests will not be able continuously to supply the requirements of the agricultural population. If this is what the Conservator intends to imply, then I am directed to request that it be considered whether it will not be desirable, in the interests of the country, considerably to increase the area of the reserves, with the view of closing selected blocks, and improving their productive powers.

11. From the statement recorded on page 32 of the report it appears that from 1873-74 to 1875-76 an aggregate of 3,062 tons of sandalwood were collected and only 2,549 tons sold. I am directed to enquire what has become of the difference of 513 tons. The price of this wood has been rising steadily of late, and the Governor-General in Council trusts that the Chief Commissioner will not consent to any arrangement, such as that adverted to in paragraph 80 of the report, under which Government would be bound to sell the produce of future years at a fixed rate, which might possibly be much lower than the average market rate of the year.

12. The cash transactions of the year have been as follows:—

		Rs.
Receipts		4,56,270
Charges	A	1,10,771
	B	1,24,520
	Total	2,35,291
	Surplus	2,20,979

Of the charges under Conservancy and Works, Rs. 74,093 were expended on the production of revenue, and Rs. 36,678 on the maintenance and improvement of the forests.

The comparison of actuals with estimates should be omitted in future administration reports. They are of no permanent interest, and their appropriate place is in the annual statement of actual receipts and charges.

I have the honour to be,

SIR,

Your most obedient Servant,

G. H. M. BATTEN,

Officiating Secretary to the Government of India.

No. 168.

COPY of the above, and of the report which it reviews, forwarded to the Foreign Department for information.

C. J. LYALL,

Under-Secretary to the Government of India.

1877.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

FORESTS.

To

THE CHIEF COMMR. OF MYSORE.
„ FOREIGN DEPARTMENT.

Nos. 167 & 168.

Dated Calcutta, the 3rd February 1877.

SUBJECT.

COMMUNICATES orders on the Progress Report of the Forest Administration in Mysore for 1875-76.

Government Central Press.—No. 674, E., A. & C.—5-2-77.—460.

DEPUTY CONSERVATOR'S REPORT.

Annual Report, No. 211-400, *dated Chikalda,* 23*rd June* 1876, *on the Management and Conservancy of the Berar Forests for the Financial year* 1876-77, *by* A. T. DRYSDALE, ESQ., *Officiating Deputy Conservator.*

I HAVE the honor to submit the Progress Report of Forest Administration in the Hyderabad Assigned Districts for the year 1875-76.

PART I.—SPECIAL.

HEAD I.—STATE FORESTS AND LEASED FORESTS.

SECTION 1.

AREA, BOUNDARIES, DESCRIPTIVE ACCOUNT.

Area of State Forests.

2. The area of State Forests at the close of the year is exhibited in the following statement :—

	Area in 1874-75.	Added during the year.	Excluded or transferred to other heads.	Total remaining in 1875-76.
NORTHERN DIVISION.	Square miles	Square miles.	Square miles.	Square miles.
Bairagarh	400	14	14	400
SOUTHERN DIVISION.				
Garu-Mattergaon	73	...	...	73
Ghatbori	36	...	...	36
Pengauga	18	...	...	18
Kelapur	50	...	...	50
Small tracts of Mangla, Jalgaon, Renkapur and Dapura ...	1	...	...	1
Kinwat-Korat	83	...	...	83
Total ..	661	14	14	661

Bairagarh reserve—Demarcation

3. During my inspection of the Bairagarh reserve last cold weather, I was struck by the facility with which natural boundaries might be selected for this forest without any material difference being made in the extent of its area, or without any expenditure being incurred that could not be met from the budget grant, and I accordingly procured sanction to carry out the necessary changes. The areas struck off consisted for the most part of portions of cultivated villages or of comparatively poor jungle, whilst the additions made were almost without exception waste lands containing good and promising timber. The additions and deductions may be said to have counterbalanced one another. Whereas the former boundaries comprised 61 miles of cut lines and 26 miles of natural boundaries, those now selected consist of 26 miles of cut lines and 61 miles of natural boundaries. And of the cut lines 21 miles follow the boundary between Berar and the Central Provinces.

The advantages of having natural boundaries cannot be overrated. Such boundaries, besides being effectual barriers against fires, cost nothing for maintenance, and are, moreover, not liable to be changed or interfered with in any way.

The revised boundaries of this reserve were published in the *Residency Orders* of the 20th March 1876.

Penganga Reserve—Demarcation.

4. The demarcation of the Penganga reserve has been completed at a cost of Rupees 318-3-0.

Kinwat-Korat Reserve—Demarcation.

5. About two-thirds of the boundary lines of this reserve have been cut, and pillars erected for the small sum of Rupees 213-0-9, and the Assistant Conservator hopes to be able to report the completion of the demarcation before the close of the present working season. The small expenditure incurred is owing to the boundaries being for the most part natural ones.

Kelapur Reserve—Demarcation delayed.

6. No settlement has yet been come to with the Izaradars in the Kelapur reserve, and the Deputy Commissioner, owing to the difficulties that have arisen, is inclined to recommend the area of the reserve being reduced by the exclusion of several of the leased villages. I trust, however, that the Deputy Commissioner may ultimately be able to arrange for these lands being resumed on sufficiently favorable terms, as the reserve is not large enough to bear being reduced to any great extent. Meanwhile no expenditure is being incurred in the erection of permanent boundary pillars, although the temporary ones have been repaired during the year at a cost of Rupees 23-12-0.

Demarcation of reserves expected to be completed at close of year.

7. The completion of the demarcation of the Garu-Mattergaon and Ghatbori reserves was reported last year, and at the close of the current working season, therefore, it is expected that all the State forests in Berar will have been finally demarcated, with the exception of the Kelapur reserve.

SECTION 2.

REQUIREMENTS OF THE SURROUNDING POPULATION, PRESCRIPTIVE RIGHTS.

Bairagarh Reserve—Inhabitants and cultivation.

8. In my report for 1874-75 I estimated, that the 92 inhabited villages situated within the Bairagarh reserve contained a population of 3,680 persons and a cultivated area of 8,710 acres, but remarked that the inquiries being made under the orders of Government, marginally* quoted, would determine the exact figures. It now appears that the population at that time consisted of 6,843 persons, and that the cultivated area amounted to 9,480 acres, the estimate in population being thus exceeded by 3,163 persons, and in cultivation by 770 acres. The number of head of cattle was 6,087. During the year under report, the number of inhabited villages has been reduced from 92 to 68; the population from 6,843 to 5,105, and the cultivated area from 9,480 to 7,275 acres.

* Department of Revenue, Agriculture and Commerce, No. 89-C., dated 3rd March 1875.

These changes have been brought about:—

1*st.*—By the desertion of 14 villages, the soil of which had become exhausted for crop bearing.

2*nd.*—By 4 villages being excluded from the reserve when revising the boundaries.

3rd.—By giving effect to the rule sanctioned in your No. $\frac{738}{370}$, dated 28th February 1876, whereby villages situated outside the boundary line, though having a portion of their lands inside the reserve, were to be considered as entitled to no privileges within the latter area. Under this rule 6 villages have been reduced.

Resumption of rights.

9. I mentioned last year that the area of the Bairagarh reserve would probably have to be curtailed in order to form it into a pure State forest free of rights and privileges, but such would now appear to be no longer necessary, as exhaustion of soil will in a few years cause many more villages to become deserted, whilst the increased freedom in forest matters that has recently been given to cultivators in the unreserved forests, and which will be referred to under its proper heading, will doubtless induce most of the remaining villages to move. A few black-soil villages may ultimately require to be bought up, but the amount of money compensation that this will entail will be trifling as the villages are so small.

Reserves in South Berar—Freedom from rights.

10. With the exception of rights of grazing over 2,532 acres in the Garu-Mattergaon reserve, 2,552 acres in the Ghatbori reserve, and 1,663 acres in the Penganga reserve, all rights and privileges in these forests have been commuted, and it is expected that the arrangements now being made for exchanging the above grazing lands for others outside the boundaries of the reserves will be completed before the close of the present working season.

The cultivated area, consisting of 183 acres, included within the Kinwat-Korat reserve, has been resumed at a cost of Rs 1,147-9-8, and this reserve is now entirely free of cultivation. The question of the Izara villages in the Kelapur reserve still remains undisposed of.

SECTION 3.

PROTECTION.

Permanent and Temporary Establishments.

11. A list of the several permanent and temporary establishments existing on the 31st March 1876 is given in Appendix A.

Prosecutions for breach of Forest Rules.

12. Subjoined is a statement of the prosecutions made for breaches of Forest Rules:—

Districts	No. of prosecutions.		Convictions obtained.	
	No. of cases	No. of persons.	No. of cases	No. of persons
Ellichpur	186	327	121	205
Amraoti	17	33	12	19
Akola	35	89	28	73
Basim	26	41	24	39
Buldana	13	25	11	26
Wun	25	84	23	80
Total	252	499	219	436

Compared with last year there has been a decrease in prosecutions of 33 cases and 22 persons, whilst the proportion of convictions to prosecutions, both as regards cases and persons, remains about the same.

SECTION 4.

MANAGEMENT AND IMPROVEMENT

Area protected from fire

13. The following is a comparative statement of Forest Tracts protected from fire:—

Forest tracts protected from fire.	Area in 1874-75.	Total expenditure up to 1874-75			Area protected in 1875-76.	Amount expended in 1875-76.			No of years protected.	Total expenditure up to 1875-76.		
NORTHERN DIVISION.	Acres.	RS	A.	P	Acres.	RS	A.	P		RS	A.	P.
Melghat.												
Raipur block ...	19,200	3,046	4	6	19,200	476	11	6	7 Years ...	3,523	0	0
Bairagarh reserve ...	236,800	119	2	0	236,800	318	11	0	5 „ ...	437	13	0
Open blocks, Nos 1 & 2 .	44,800	245	7	4	65,800	208	10	10	Block No 1, 4 years, Do. No 2, 3 „ Do. No 3, 2 „	454	2	2
Do., No. 3 ...	23,040	...	...	...								
Do., No. 4 ...	...	...	...	...	12,800	...	...	...	1 Year ...	...	...	...
Southern Division.												
Kelapur reserve ..	12,800	...	...	...	21,760	173	4	4	4 Years ...	173	4	4
Penganga do. ...	5,760	131	7	10	12,000	78	1	0	3 „ ...	209	8	10
Garu-Mattergaon reserve	19,200	267	7	4	35,200	190	13	8	3 „ ...	458	5	0
Ghatbori do.	3,200	132	15	8	3,200	88	2	2	3 „ ...	221	1	10
Kinwat-Korat do. ...	..	...	...	...	51,520	26	11	1	1 Year ..	26	11	1
Total	364,800	3,942	12	8	458,280	1,561	1	7	..	5,503	14	8

Compared with 1874-75, there has been an additional area protected of 93,480 acres, with an increase in the total expenditure of only Rupees 355.

In column 3 of the above statement, I have shown the expenditure from the year in which fire conservancy was first commenced.

The figures entered in column 6 are apt to mislead, as, except from the Raipur block and the Bairagarh reserve, fire has not been kept entirely out of any forest for a series of years. Thus, in the open blocks of the Melghat unreserved forests and in the reserves of south Berar, fire protection has been

only partial, it frequently happening that a portion of forest saved one year would be burnt the following year. The figures therefore must be understood to represent the number of years that protective measures have been adopted, and are only to be considered literally true as far as the Raipur block and the Bairagarh reserve are concerned.

It would be advisable, I think, in future years only to show forests in this column that have been entirely protected.

NORTHERN DIVISION.

Raipur Block.

14. The Raipur block has now been successfully protected for 7 years. The fire path was burned for Rupees 149-2-0, or at the rate of Rupees 7 per mile, which compares favorably with the rate in 1874-75, *viz.*, Rupees 10-6-0 per mile.

Hereafter it is not proposed to adopt any special measures for the protection of the Raipur block, but to treat it in the same way as the Bairagarh reserve of which it is in fact a part.

For the last 5 years the Bairagarh reserve has been as successfully protected as the Raipur block and at about one-twentieth of the cost.

Bairagarh Reserve.

15. The increased expenditure shown against the Bairagarh reserve is owing to more subdivisional paths having been made, the reserve having been divided this year into 15 blocks instead of 10. The utility of the sub-divisional paths has, I am glad to say, not been tested, but there can be no doubt they would have proved of great assistance had fires occurred. Only one fire broke out, but it was speedily extinguished before any harm was done. The small area burned consisted principally of plateau land containing very little teak or other valuable wood.

Benefits of the exclusion of fires.

16. Natural reproduction continues to progress in the same rapid manner noted in former reports, and in a few more years, I hope to see the Bairagarh reserve almost safe from fires. Even now what with nullahs, fire paths, and thickly wooded banks, fires can comparatively speaking be easily controlled if attacked in time, and not allowed to gain any great breadth.

It is particularly satisfactory that teak and tewus, which are perhaps the two most valuable woods in the Melghat, do not appear to be surpassed by any other trees in powers of reproduction. In the case of teak, seedlings are to be found wherever there are any seed producing trees, whilst, on the other hand, tewus seems to spring up spontaneously without requiring mature trees to be growing in the immediate neighbourhood. Tewus thrives best on elevated ground, and is almost invariably the predominant tree on all open spaces such as village clearances or the sites of old fields.

Hitherto I have been inclined to look upon tewus as a second rate tree having a short crooked stem with a spreading head. This habit of growth is, however, not natural, but would appear to be the result of bad treatment, as when left to itself and protected from fire, the tree produces a trunk equally as straight as teak, although of course not so long. At present there is hardly a sound full grown tewus tree in the Melghat, as before the establishment of the Forest Department every tree almost of this kind used to be stripped of its bark by the Koorkoos for fish poisoning, and as the bark of about 500 trees is required to destroy the fish in an ordinary sized pool, the injury that used to be done to the forests may be imagined. In durability and strength tewus is not to be surpassed by any tree in the Melghat, and for the last few years the tewus sold at the Nakahs has commanded higher prices even than teak.

Meteorological Observations in Melghat.

17. The following is a statement of meteorological observations taken in the Melghat during the year :—

Month	Chikalda. Mean of Hygrometer. 10 A. M. Wet.	Chikalda. Mean of Hygrometer. 10 A. M. Dry.	Chikalda. Mean of Hygrometer. 4 P. M. Wet.	Chikalda. Mean of Hygrometer. 4 P. M. Dry.	Makhla. Mean of Hygrometer. 10 A. M. Wet.	Makhla. Mean of Hygrometer. 10 A. M. Dry.	Makhla. Mean of Hygrometer. 4 P. M. Wet.	Makhla. Mean of Hygrometer. 4 P. M. Dry.	Chikalda. Rain-fall. Inches.	Chikalda. Rain-fall. Cents.	Chikalda. No. of rainy days.	Makhla. Rain-fall. Inches.	Makhla. Rain-fall. Cents.	Makhla. No. of rainy days.	Raipur. Rain-fall. Inches.	Raipur. Rain-fall. Cents.	Raipur. No. of rainy days.	Pili. Rain-fall. Inches.	Pili. Rain-fall. Cents.	Pili. No. of rainy days.	Remarks.
June ...	70	78	70	80	71	78	73	82	12	88	21	8	24	19	...	...	.	...	...	...	The rain-fall at Chikalda and Makhla was registered from 1st June, and at Pili and Raipur from 15th July. The observations were taken at 4 P. M.
July ...	70	71	70	72	69	70	70	72	32	38	27	35	94	25	16	22	12	26	63	16	
August ...	65	69	65	66	69	70	71	73	12	82	21	17	49	15	16	87	21	23	99	24	
September ...	66	69	70	71	70	72	73	75	15	76	16	17	51	13	18	14	18	19	48	17	
October ...	65	73	65	72	64	72	63	76	2	18	5	.2	1	4	...	...	...	...	...	..	
November ...	60	73	54	72	59	70	72	76	...	...	...	...	...	...	...	...	...	...	...	...	
December ..	58	70	55	71	59	69	57	74	...	12	2	...	...	...	...	...	...	...	...	...	
January ...	56	70	63	72	59	73	64	76	...	...	...	..	...	...	...	..	...	..	...	..	
February ...	56	70	59	76	56	77	63	83	...	...	...	...	...	...	...	...	...	...	...	...	
March ..	58	77	61	83	64	84	67	90	.	4	2	...	...	.	..	...	..	...	...	...	
Total ...	62	72	63	73	64	73	67	77	76	18	94	81	19	76	51	23	51	70	10	57	

Chickalda is situated outside the Bairagarh reserve, and is 3,773 feet above the level of the sea. Makhla, Raipur, and Pili, are all inside the reserve, and have altitudes as below :—

Makhla...	...3,360
Raipur	...2,500
Pili	...1,512

Owing to the gauges not arriving in time, the rain-fall at Raipur and Pili could not be registered till the 15th July, but from the observations taken, it would appear that the rain-fall at the three places inside the reserve was greater than at Chikalda, whilst the fall at Pili was the largest of all. The rise and fall of the Seepna river at Pili has also been registered, but the observations taken are of little use until they can be compared with those of other years. They are therefore not shown in the above statement, but are kept for comparison with the observations that will be taken during the approaching rainy season.

Melghat Unreserved Forests. Area protected from fire.

18. At an expenditure of Rupees 208-10-10, fire has been kept entirely out of blocks Nos. 1, 2, and 3, and partially out of block No. 4, the block being worked of the Melghat

unreserved forests. Where there are constantly people moving about in all directions, as in the block that is being worked, it is impossible to prevent fires altogether, but as there are no coppice shoots to burn, fire does comparatively little harm. The above expenditure is on account of burning paths and pay of temporary watchers.

SOUTHERN DIVISION.

Reserves in South Berar Area protected from fire

19. Out of 261 square miles, which represent the area of the State forests in the southern division, the Assistant Conservator has succeeded in protecting 193 square miles from fire at a cost of Rupees 557-0-3. These results compare favorably with those of last year, when only 64 square miles were saved, and that at a cost of Rupees 465-3-4, or only Rupees 91-12-11 less than were expended during the year under report.

Kelapur Reserve.

20. Thirty-four square miles, or a little more than two-thirds of this reserve, have been successfully protected. The Assistant Conservator blames the Izaradars for the fires that broke out, as most of the jungle belonging to these men was burnt in spite of the precautions taken by the Forest Department.

Penganga Reserve

21. The whole of the Penganga reserve has been saved. This is the first instance of any reserve in south Berar being entirely protected from fire, and I am inclined to attribute the success in a great measure to the reserve being so near the Assistant Conservator's head-quarters, and to his being able to inspect it frequently in consequence The Assistant Conservator visited the reserve four times during the year In his report the Assistant Conservator in alluding to the Penganga reserve thus describes the efficacy of fire paths: "On one occasion the reserve had a very narrow escape. A fire broke out in the unreserved jungle of Pandurna, and, fanned by a strong wind, burnt straight up towards the reserve. On the slope of a hill the State forest fire path was cut, and presented nothing for the fire to lay hold of; so when it reached this obstacle, it received a check, but eating its way for nearly three miles all along the fire path, it suddenly turned off, and burnt away towards the open forests, not going out till many square miles of grass were destroyed, but leaving the reserve untouched."

Garu-Mattergaon Reserve.

22. Out of 73 square miles 18 were burnt, thus leaving 55 square miles protected. These results are satisfactory considering that the Daroga has been on sick leave for the whole year, and that his *locum tenens* was comparatively young and inexperienced.

Ghatbori Reserve

23. Till the end of February the Ghatbori reserve was successfully protected, but in the beginning of March six or seven fires broke out at the same time, as if they had been purposely lighted, and before they could be extinguished, the whole area was burned with the exception of 5 square miles. The originator of the fires was unfortunately not discovered.

Kinwat-Korat Reserve

24. For the greater portion of the year the Assistant Conservator has been engaged in demarcating the Kinwat-Korat reserve, and to his constant presence may be attributed the very marked success that has attended fire conservancy within this area. Out of 83 square miles only 3 have been burned. The Assistant Conservator remarks that he found the Patels and people of the villages bordering this reserve most willing to assist him in his work, and that they also appeared to take much interest in the protection of the reserve from fire.

Area under Plantation.

25. Subjoined is a statement of the area under plantations at the close of the year:—

PLANTATION.	Area in 1874-75.	Total cost.			Area added during the year.	Amount expended during 1875-76.			Area excluded in 1875-76 being insufficiently stocked.	Total area up to 1875-76.	Total expenditure up to 1875-76.			Remarks.
NORTHERN DIVISION.														
Bairagarh Reserve.	Acres.	Rs.	A.	P.	Acres.	Rs.	A.	P.	Acres.	Acres.	Rs.	A.	P.	
Pili	12	823	0	0	...	...	...	...	...	12	823	0	0	Teak—fully stocked.
Rakidoh	13	180	14	2	...	...	...	...	...	13	180	14	2	Do.
Sembadoh... ...	2	28	0	0	...	...	...	...	...	2	28	0	0	Do.
Dugaputti ...	11	435	0	0	...	...	...	...	...	11	435	0	0	Do.
Pipalcota	120	3,782	7	10	...	120	0	0	...	120	3,902	7	10	Do.
Saoli	130	3,289	6	7	...	225	0	0	...	130	3,514	6	7	Do.
Bujru	82	1,621	0	0	...	...	...	...	82	...	1,621	0	0	Do. insufficiently stocked.
Lubu	279	3,442	1	2	...	...	...	...	279	...	3,442	1	2	Do.
Saoli and Korita ...	370	2,232	9	7	...	...	...	...	370	...	2,232	9	7	Do.
Jambulwari ...	600	3,500	0	0	...	...	...	...	...	600	3,500	0	0	Do. fully stocked.
Bujru No. 2 ...	75	360	0	0	...	50	0	0	...	75	410	0	0	Do.
Pili No. 2 ...	40	500	0	0	...	450	0	0	40	...	950	0	0	Do. insufficiently stocked.
Pipalcota No. 2 ...	60	800	0	0	...	86	0	0	60	...	886	0	0	Do.
Rakiadoh	40	200	0	0	...	900	0	0	40	...	1,100	0	0	Do.
Abapur	...	...	...	...	...	1,701	7	0	...	...	1,701	7	0	Teak—120 acres now under formation.
Total ...	1,834	21,194	7	4	...	3,532	7	0	871	963	24,726	14	4	
AMRAOTI DISTRICT.														
Bhiwapur	25	150	5	6	...	...	...	...	25	...	150	5	6	Teak—insufficiently stocked.
Cherori	37	300	7	0	...	...	...	...	37	...	300	7	0	Teak and babool do
Mahdeokora ...	5	38	0	0	...	...	...	...	5	...	38	0	0	Do. bamboo do.
Seonikurd... ...	24	228	3	0	...	...	...	...	24	...	228	3	0	Do. babool do.
Amraoti	161	2,022	11	6	...	81	7	2	161	...	2,104	2	8	Mixed do.
Burmi	100	286	1	0	...	...	...	...	100	...	286	1	0	Do. do.
Moregaon... ...	24	150	9	10	...	...	...	...	24	...	150	9	10	Babool do.
Lonetake	92	254	3	0	...	...	...	...	92	...	254	3	0	Do. fully stocked.
Jowaer	...	...	...	...	...	42	0	0	...	...	42	0	0	Do. 24 acres now under formation.
Total ...	468	3,430	8	10	...	123	7	2	468	...	3,554	0	0	
SOUTHERN DIVISION.														
Garu-Mattergaon Reserve.														
Boarkalda... ...	16½	193	11	6	...	3	6	0	16½	...	197	1	6	Anjan—insufficiently stocked.
Penganga Reserve.														
Belura	...	187	8	0	...	...	...	...	...	...	187	8	0	Teak do.
Pangla	...	4	6	0	...	...	...	...	...	...	4	6	0	Do. do.
Pandurna	...	0	15	0	...	...	...	...	...	...	0	15	0	Do. do.
Total ...	16½	386	8	6	...	3	6	0	16½	...	389	14	6	
BASIM DISTRICT.														
Basim	20	77	2	0	...	97	14	0	20	...	175	0	0	Babool do.
Grand Total ...	2,338½	25,088	10	8	...	3,757	2	2	1,375½	963	28,845	12	10	

In accordance with the instructions conveyed in para. 5 of letter from the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce, to the Resident, No. 1244, dated 1st December 1875, reviewing the Forest Report for 1874-75, I have excluded from column 7 of the above statement all areas, save such as are completely stocked. I should mention, how-

ever that many of the plantations excluded, although they contain only a small proportion of the seedlings originally put out, have still sufficient plants left to cover the ground with the help of natural grown trees of kinds now existing, or that may be expected to spring up in the course of a few years.

Nevertheless, after excluding, for the above reason, the large area of 1,375½ acres, there remain 963 acres of plantations fully stocked to show for a total expenditure on plantations of all kinds of Rupees 28,845-12-10, or, in other words, allowing nothing for plantations partially stocked, the cost per acre for plantations fully stocked amounts to about Rupees 30 only. The sum of Rupees 28,845-12-10 includes, in addition to the cost of 1,375½ acres of plantations insufficiently stocked, the expenditure of Rupees 1,743-7-0 incurred on the plantations of the year under report. The area of these plantations, 144 acres, has not been shown in the body of the statement, as their success has not yet been ensured.

Melghat Plantations.

26. The plantations at Pili and Rakidoh, which were in course of formation when the report for 1874-75 was submitted, were completed last rainy season, but owing to the very heavy rain-fall of the year, a large quantity of the plants, which were all nursery raised, and were put out in pits at 6 feet apart, damped off during the months of August and September.

The blanks in these, as well as in the plantations of former years, will be filled up during the approaching rainy season from plants still growing in the nurseries of 1874. These plants are now strong and well established, and are not so liable to be effected by irregularities of climate as plants only a few months old.

Extent of new plantations.

27. The plantation at present being made is situated near the village of Abapur in block No. 1, and occupies an area of about 120 acres. Pits have been dug at 6 feet apart, and transplanting will be commenced in July. For the supply of plants, a nursery of nearly half an acre in extent has been formed at Kolkaz on the Seepna river at an expenditure up to the 31st March of Rupees 302-2-6. About 760 seers of teak seed, including 40 seers of Burmah seed, were sown in the cold weather, and watering by means of a "*mote*" and bullocks was begun on the 1st March. There are now upwards of 30,000 plants above ground. The Burma seed has germinated even better than the Melghat seed.

It is intended to make this a permanent nursery, and from it to put out plants into lines leaving them there for one year, or perhaps even two years, if found desirable, before finally transferring them to the plantations. Although the first cost of plantations formed on this system will be large, yet it is hoped an ultimate saving may be effected, as plants will only have to be placed 10 or 12 feet apart. Moreover, no weeding will be required, as the plants will be sufficiently strong to take care of themselves; nor will it be necessary to clear the ground of scrub and grass before transplanting.

Proposed bamboo plantation.

28. In the vicinity of the nursery there is a plot of ground about 6 acres in extent on which it is proposed to carry out the experiments in the cultivation of bamboos for the manufacture of paper directed in letter from the First Assistant Resident to your address, No. 195, dated 16th August 1875. The ground can be irrigated from the same water as the nursery.

Expenditure on plantations less than was estimated.

29. The expenditure on plantations during the year has been little more than half what was estimated. This is accounted for partly by scarcity of labor, and partly by doubts I am beginning to entertain as to the soundness of the present system of forming plantations.

At the commencement of the rains cholera broke out at Pili, in consequence of which many of the Gonds left, and it was impossible to fill their places till the epidemic had disappeared, which was not till the cold weather had set in.

Since fire conservancy was commenced, a complete change appears to have taken place in the climate of the Bairagarh reserve. Before the forests were protected, frosts were hardly ever heard of: now they are of annual occurrence, and unfortunately they are most severe in lowlying lands and in blanks—the very places where plantations are formed. Year by year thousands of artificially raised plants are killed by frost, and there is no certainty that plants of this kind that have survived one year may not be killed the next. Thus, a plantation shown as fully stocked in one report may, on a future occasion, have to be entered as insufficiently stocked.

It is only, however, in places completely denuded of timber growth that frosts are so destructive. Where there are a few trees, or even a little scrub jungle, frosts do comparatively little harm, and this would seem to point to the desirability of discontinuing the system hitherto in force of clearing lands of grass and every description of growth prior to sowing or planting, and of only forming plantations in places where there is already some kind of vegetation. Instead therefore of making plantations in lines, the plants being at fixed distances from one another, I purpose in future planting strong two year old seedlings irregularly in places where there is room for them, and even this I shall only do in localities containing no seed bearing teak trees, and that are not likely therefore to be planted up naturally. For where fire is excluded natural reproduction may now be looked on as a certainty, if only trees exist in sufficient numbers to shed seed, in which case all that is required is that the seedlings be protected from grass and undergrowth during their first rainy season. In the past year in block No. 1 over 200,000 of such teak seedlings have been cleared of grass for the small sum of Rupees 385-15-0, and the deaths among them have been very few indeed. These seedlings, it may be observed, are in places growing so close together as almost to form pure teak plantations, which would seem to indicate the possibility hereafter of very considerably increasing the proportion of teak to other trees in our forests. In future years, then, it is my intention to trust chiefly to natural reproduction for the re-clothing of the forests in the Melghat; to cease making pure teak plantations, and only to put out strong healthy plants irregularly in places where there are no teak seed bearing trees, but where there is already a scanty growth of other woods.

Plantations in Amraoti district.
Plantation at Jewer.

30. Twenty-four acres of land near the village of Jewer have been sown with babul on the notch system, but the result will not be known till next year.

Plantation at Sudder Station.

31. In para. 38 of the report for 1874-75, it was stated that owing to the failure of the notch system in this plantation a nursery would be formed, and all blanks filled up with transplants. Accordingly, last cold weather a nursery of nearly half an acre in extent was prepared principally of Sissu and Anjan, and there are now about 100,000 of young plants averaging about 6 inches in height. These I had intended having transplanted during the approaching rainy season, but I have since come to the conclusion that before finally putting them out in the plantation, it would be safer to give them one year in nursery lines. They will therefore be transplanted into lines in the rains, and finally transferred to the plantation in July 1877.

Plantations in Southern Division.

32. Nothing has been done in the way of plantations in the southern division, as the Assistant Conservator's time has been fully taken up in the demarcation and other work.

He is now, however, engaged in preparing a nursery of teak and Anjan at Bora Khari in the Garu-Mattergaon reserve, with a view to making experiments in the filling up of blank spaces in the forests under his charge. The nursery will be watered daily till the rains set in, and in July the seedlings will be transplanted into lines, remaining there till July of the following year, when they will be removed to their permanent sites. While in the lines the plants will be watered during the hot-weather of 1877.

Erection of Thannahs.

33. During the year strong substantial Thannahs have been erected in each reserve for the accommodation of the subordinate establishments. Nine Thannahs were built in the Bairagarh reserve at a total cost of Rupees 557-11-0. Five more Thannahs are in course of construction.

In the southern division 19 Thannahs have been erected at an average expenditure per Thanna of Rupees 18.

Maps of Reserves.

34. Now that natural boundaries have been selected for the Bairagarh reserve and the blocks into which the latter has been divided, there is no longer any necessity for a special survey of the boundary lines, as they are already clearly delineated in the topographical survey maps. And with regrad to the reserves in the southern division, the Revenue Survey Department have already supplied maps of the Garu-Mattergaon, Ghatbori, Penganga, and Kinwat-Korat reserves, and are now preparing maps of the Kelapur reserve, which, it is expected, will be completed before the close of next year.

Forest road from Ellichpur to Pili.

35. The Executive Engineer informs me that the 1st Section of this road will be open for traffic by the end of the present year.

The earth-work is nearly completed, and material for surfacing and masonry works is being collected.

The expenditure up to 31st March amounted to Rupees 9,959.

SECTION 5.

YIELD AND WORKING OF THE FORESTS

Bairagarh Reserve. Coppicing of badly grown teak.

36. The coppicing of badly grown and otherwise useless teak trees was confined to the 1st of the 10 blocks into which the Bairagarh reserve was last year divided, and altogether about 12,000 trees were cut over. These trees yielded 18,620 pieces of sound timber of sizes, which on sale realized the sum of Rupees 6,986-7-0. The coppice from the trees cut over in former years remains healthy and vigorous.

Southern Division Reserves Timber operations.

37. With the exception of 822 goles and 1,320 *bullees* cut in the Penganga reserve, there have been no timber operations in the Southern Division. Only a portion of the above wood has been sold, the receipts on account thereof amounting to Rupees 401-3-0.

HEAD II.—UNRESERVED OR DISTRICT FORESTS.

Unreserved Forests—area.

38. The following is a comparative statement of the area of unreserved forests for the last two years:—

	Area in 1874-75.		Added during the year 1875-76.		Excluded or transferred to other heads.		Total remaining in 1875-76.	
Ellichpur.								
Melghat Taluka	1,100	...	...	...	...	...	1,100	...
Babul Buns of Ellichpur and Daryapur talukas	20	384	...	...	...	...	20	384
Amraoti.								
Fuel Reserves	60	...	...	...	...	...	60	...
Babul Buns	14	35	...	...	...	...	14	35
Akola ... District Reserves ...	...	...	...	...	...	...	45	364
Akola ... Unreserved Forests ..	314	504	7	550	12	522	264	168
Buldana. District Reserves ...	23	543	...	...	...	...	23	543
Buldana. Unreserved Forests ...	533	97	45	...	96	192	481	545
Wun ... District Reserves ...	...	...	...	...	...	...	357	575
Wun ... Unreserved Forests ...	1,188	320	...	...	...	...	830	385
Basim... District Reserves ..	...	...	...	...	...	...	30	430
Basim... Unreserved Forests ..	620	...	...	...	...	...	589	210
Total ...	3,874	603	52	550	109	74	3,818	439

The entries as regards Akola in Column 2 differ from those shown in Column 5 of statement for last year, as the Deputy Commissioner in his report for 1874-75, through a misunderstanding, only gave the area of the district reserves, and failed to show the extent of unreserved forests or of babul buns, which latter ought, properly speaking, to have been included among district reserves. In the present statement I have distinguished district reserves from unreserved forests in each district. Compared with 1874-75, there has been a decrease in the area of district forests of a little more than 56 square miles due partly to the extension of cultivation, and partly to corrections made by the Deputy Commissioner, Buldana, in the area statements of his district.

District Forest Rules.

38. The district forest rules published in the *Residency Orders* of the 6th April 1874 still remain in force. Except in the Buldana and Akola districts, where they are worked on a 15 years' rotation, the district reserves enjoy almost complete rest. At present the unreserved forests in these two districts are insufficient of themselves to supply local wants, which in the remaining districts are amply met from such forests.

Cultivation is strictly prohibited within district reserves, though not within the unreserved area, and in time, therefore, as cultivation increases, there will remain little else but the State and district reserves to supply all the requirements of the province.

NORTHERN DIVISION.

Melghat Unreserved Forests. Exports of reserved timber from Block No. 4.

39. Block No. 4 of the Melghat unreserved forests was opened on the 1st June last for the cutting of teak and other reserved descriptions of wood, and the amount of produce exported up to the close of the official year was as follows :—

Cart loads.		Bullock loads.		Karass.		Head loads.		Total number of pieces exported.	Duty levied at Bazaars.	
No.	Pieces.	No.	Pieces.	No.	Pieces.	No.	Pieces.		Rs.	A. P.
36	1,728	8,179	68,170	11,452	68,828	6,030	25,459	159,185	16,440	3 6

Compared with the produce exported from block No. 3, there has thus been a decrease in wood of 60,202 pieces, and in revenue of Rupees 9,188-10-6.

Less demand for Teak.

40. The demand for teak wood during the past year has been less than in any previous year, and I can only account for this by the import of teak from the Central Provinces, which under recent orders from the Government of India, is no longer required to pay duty when passing the Melghat line of nakahs, and by the fall in the price of cotton, and the consequent impoverishment of the Kunbis, who are the chief purchasers of wood.

The wood cutting has been better done in block No. 4 than in any of the other blocks. Every tree almost has been felled level with the ground, and

the stumps neatly pared. It is expected, therefore, that the coppice in this block will be particularly good.

Damage from fire in 1874-75.

41. Little damage was done by the fire in blocks Nos. 1 and 2 referred to in para. 58 of the report for 1874-75, as the coppice shoots were too strong to be burnt down, or to suffer more injury than a slight scorching. Moreover, the coppice is so scattered, there not being on an average, I believe, more than one shoot to the acre that the effects of the fire are hardly noticeable.

Exports of unreserved produce from the Melghat unreserved forests.

42. Subjoined is a statement of unreserved produce exported from these forests during the year:—

Total produce.				Total duty.		
Unreserved timber.	Carts.	744¼		148	8	0
	Karass.	28,260¼		14,130	2	0
	Bullocks, ponies, or donkeys.	842		257	4	0
	Head loads.	32,238¾		4,029	13	0
Fire-wood.	Carts.	12,577		4,716	6	0
	Camels	139		35	7	0
	Bullocks, ponies, or donkeys.	17,298		1,625	2	6
Lime.	Carts.	48¾		48	8	0
Charcoal.	Carts.	19		38	0	0
	Bullocks, ponies, or donkeys.	9,896		2,478	10	0
	Head loads.	5,385¾		673	3	0
Grass.	Carts.	4,205¾		1,577	1	0
	Camels.	54		10	2	0
	Bullocks, ponies, or donkeys.	12,645¾		1,183	11	9
Lac.	Bullocks, ponies, or donkeys.	16¾		16	8	0
	Head loads.	582¼		218	5	6
Teak leaves (bundles.)		9,494		593	6	0
Bamboos.		1,147,660		14,476	9	0
Bamboo ties.		8,092¾		257	15	6
Roots and fruits.	Carts.	1,497		2,245	8	0
	Camels.	49		36	12	0
	Bullocks, ponies, or donkeys.	1,287½		482	8	0
	Head loads.	524¼		65	8	6
Gum.	Carts.	8		24	0	0
	Bullocks, ponies, or donkeys.	49		37	3	0
	Head loads.	10		2	8	0
Miscellaneous.	Carts.	30		90	0	0
	Bullocks, ponies, or donkeys.	49		17	0	0
	Head loads.	1,189¾		297	6	9
	Total.			49,213	5	6

If this statement be compared with the one for 1874-75, contained in para. 59 of the report for that year, it will be seen that the quantity of each product exported during the two years is almost equal. There are no striking differences. As regards revenue there is an increase in favor of the year under report of Rupees 1,712-6-9.

Rules for restricting the cutting of bamboos.

43. On the 1st January 1876 rules for the restriction of the cutting of bamboos were brought into force. Instead of allowing indiscriminate cutting over the whole area of the forests, three blocks were opened for the cutting of bamboos for export by the public, whilst the export of dry bamboos in head loads by *bonâ fide* residents of the Melghat was also permitted from the remaining blocks. These rules have not been long enough in force to make any perceptible difference in the number of bamboos exported, which has exceeded that of the previous year by 51,544, equivalent in revenue to Rupees 515-6-6. It is satisfactory, however, to learn that a much larger quantity of dry bamboos has been cut than in any former year, and it must be remembered that it is not so much a reduction in the number, as a change in the description, of bamboos exported that I wish to effect. Dry bamboos, if

left, only decay, and it is to the advantage of the Department therefore that they should be utilized. In former years hardly any but green bamboos used to be exported.

Removal of bazaar from Akoli to Ambori.

44. The wood bazaar at Akoli was removed in February last to Ambori, a village three miles further north, and consequently nearer to the hills. Akoli is a Jagheer village, and there was difficulty in procuring suitable land for the bazaar.

Increase of Melghat Unreserved Forest Establishment.

45. The Melghat Unreserved Forest Establishment has been increased during the year by the appointment of a Daroga, and 14 2nd Class Watchers at an additional cost per annum of Rupees 2,220. In each block, with the exception of the one being worked, in which there is a 1st Class Jemadar and three Watchers—one of each grade—there is now a 2nd Class Watcher, the whole establishment being under the Daroga.

Stricter conservancy enforced.

46. With this extra establishment it was possible to enforce a more rigid system of conservancy. Thus, I was enabled to check the export of bamboos and unreserved timber, and to see that the rules regarding them were duly observed. I was also able to adopt measures for the protection of larger areas from fire. A tour made towards the close of the official year, however, convinced me that it was impossible to continue the enforcement of the above measures without causing a large amount of discontent, and perhaps even ultimately leading to the emigration of a considerable portion of the population, and I accordingly determined to reduce the area within which a stricter system of conservancy than obtained in former years should prevail.

Proposals for the future management of the Melghat Unreserved Forests.

47. My proposals with this view were that a tract of about 300 square miles, comprising the best wooded portion of the forests should be selected as a district reserve, and that the remaining area of about 800 square miles should be given up to the people for the extension of cultivation, and for the supply of their requirements in the matter of forest produce, both descriptions of forest remaining as at present under the executive control of the Forest Department. Within the unreserved area no restrictions were to obtain except in regard to teak and bamboos, which were to be reserved exclusively for the inhabitants of the Melghat. It was necessary to make this restriction, otherwise the forests would have been inundated with Mooltanees, Bunjaras, and other people from the plains, and would soon have been denuded of the above products.

All produce exported from the unreserved forests was to pay duty at one of the nakahs prior to being taken into the plains.

Grazing dues were still to be levied, and minor forest produce, such as mowha, mango, &c., was to be sold annually by auction village by village.

The extension of cultivation or the burning of grass were in no way to be interfered with, and the present establishment was to be withdrawn to the district reserve, so that the people might not run the risk of being needlessly troubled by fire path watchers and other subordinates.

The district reserve was to be divided into 15 blocks of about equal area, the boundaries being marked off on the plan sketched in my Memorandum on the Melghat, dated 14th February 1872.

Each year one block was to be opened for the cutting of timber of all kinds, and such produce as was exported from the block was to be covered by

a pass from the establishment. The pass was to be given up at the nakah, where the produce was taken for sale, and was to serve as a check on the amount of duty levied by the nakah carkoon.

After each block had been worked, it was to be closed against grazing for five years. For the felling of bamboos the same system as was recommended in my letter No. 289, dated 26th June 1875, was to be continued, *i. e.*, three blocks were to be opened annually for the cutting of bamboos for export by the public, the inhabitants of the Melghat being allowed to help themselves at pleasure to head loads of dry bamboos from any portion of the forest.

Special measures were to be taken for the prevention of fires within the whole area of the reserve. For the first few years minor produce was not to be farmed, but was to be allowed to be collected *gratis*, duty only being levied on such produce as was exported beyond the line of nakahs.

Inhabitants of villages inside the reserve were to be allowed to help themselves free of charge for domestic use to forest produce of all kinds except teak, tewns, and sheshum. They were, however, to pay grazing dues at the usual rate on all cattle they possessed.

Villages when thrown up were to remain waste, and no more villages were to be given away for cultivation.

The above proposals were expected in a few years to lead to both the State and District reserves becoming entirely waste, as the present inhabitants of these forests would doubtless be induced to move into the unreserved area by the greater attractions held out to cultivators there. And with 700 square miles of forest worked systematically, little doubt was entertained of the requirements of the northern portion of the province in the matter of forest produce being met without difficulty.

In the first few years the reserves were expected to receive comparative rest, as there would be little demand for timber from them, owing to the large area of unreserved forests thrown open to unrestricted cutting. But as the better descriptions of timber were felled in the latter area, the reserves were expected to be more drawn on, and in time it was anticipated that the greater portion of the revenue would be derived from them alone.

The above proposals were sanctioned in letter from the Second Assistant Resident to your address, No. 165, dated 13th May 1876, and how they were given effect to will be explained in the report for 1876-77.

Land for Babul Buns.

48. The revision of the areas in the plains set aside for babul plantations by the Revenue Survey Department is still going on, but it is expected that a final decision as to what lands should be retained may be arrived at before the close of the present working season.

Ellichpur District Forests. Operations of the year.

49. There has been little demand for babul wood in the Ellichpur district, and consequently no more buns have been cut down and re-sown. Of the wood remaining over from last year, the greater portion has been sold, the receipts on this account amounting to Rupees 1,319-4-6. The value of wood still remaining is estimated to be Rupees 313.

Amraoti District Forests. Operations of the year.

50. Babul buns to the extent of 100 acres have been cut down and re-sown in this district. The wood sold realized Rupees 1,087-1-6, and there was still a balance of wood at the close of the year of the estimated value of Rupees 279. The Forest Daroga reports that on the above area the

seedlings both from artificial and natural sowings are in a flourishing condition, and that the coppice shoots from the trees felled are now from six to eight feet high.

The Babul tree said to effect the water supply.

51. An interesting experiment has been tried in the Amraoti district during the past year. It is a general belief in Berar that the Babul tree consumes an exceptionally large amount of water, and that Babul plantations in the vicinity of wells or nullahs will cause the latter to dry up.

The inhabitants of the village of Lontake, about four miles to the south-west of Amraoti, reported to the Deputy Commissioner that owing to the increased growth of Babul within the last few years on some waste land in the neighbourhood of their village, a nullah, which used to contain water all through the hot season, now dried up at the close of the cold weather.

As similar complaints had been received from other villages, it was thought advisable to test the truth of the report, and accordingly the Babul trees at Lontake were up-rooted. The greater portion of the trees were cleared from the ground before the close of last hot weather, but as yet there has been no change in the water supply. The nullah dried up as usual at the end of the cold season.

Sub-division of Amraoti Hills.

52. In February last I inspected the Amraoti hills, and was struck by the needlessly large and scattered area that had been set apart from the supply of fuel and grass to the station of Amraoti and the large towns in its vicinity. This area comprised all the waste lands of the villages situated within the hills, and must considerably have exceeded the estimate of 60 square miles assigned to it. The area, too, I found to be much cut up by cultivation, and to be so burdened by rights of grazing as to render the successful introduction of any system of forest conservancy almost an impossibility.

Feeling confident that continuous tracts of waste land might be selected free of cultivation and grazing rights, and large enough for the supply of fuel and grass to Amraoti, I called for the village maps, and proceeded to mark off on them the areas that appeared desirable to take up. I was unable to exclude every field containing grazing rights, but in the few instances in which I selected such areas, I noted other waste lands which might be given away instead. Having prepared statements of the above land, I forwarded them to the Deputy Commissioner with a recommendation that if the land were available for transfer to the Forest Department, it should be formed into a district reserve. I also made proposals for the management of the forests. Inquiry is now being made as to whether any further rights exist than those brought to notice by me, and on completion of the inquiry the whole correspondence will be forwarded to you with a view to obtaining sanction to the formation of the reserve, and to the proposals made for the management of the same. The land recommended for the reserve consists of seven distinct tracts comprising an area in the aggregate of 51 square miles 177 acres.

Akola District Forests. Operations of the year.

53. Fifty-two acres of Babul in the Akola district have been cut down and the land resown.

The trees were sold standing for Rupees 1,050, the purchaser undertaking to fell and remove the wood. The result of the sowing will not be known till next year.

The Babul left over from last year, and which was estimated to be worth Rupees 925, realized on sale Rupees 777-6-0. The total area of waste land in this district amounted in 1874-75 to 314 square miles 504 acres, of which during the past year 45 square miles 364 acres have been set aside as district

reserves, and arrangements made for working them on a rotation of 15 years. General cutting is allowed over the remaining area under the District Forest Rules.

SOUTHERN DIVISION.

Buldana District Forests. Operations of the year.

54. Compared with last year there has been an increase of Rupees 2,866 in the revenue of the Buldana district, owing principally to larger receipts from grazing dues. More timber, too, has been sold than in the previous year.

The Deputy Commissioner in his report remarks that a considerable portion of the district forests has been preserved from fire, and he does not consider more than 20 miles altogether have been burnt.

He also states that the Babul bans are improving rapidly now that they are specially preserved, whilst owing to present scarcity of Babul in parts of the district a few of the richer cultivators have commenced to rear trees. He enumerates several private plantations which contain from two to three thousand Babul trees each.

Wun District Forests. Operations of the year.

55. The timber sales in the Wun district amounted to only Rupees 715-6-8, whilst there remained at the close of the year timber in hand of the estimated value of Rupees 240. The above timber was of reserved kinds, and was cut chiefly in the unreserved forests.

On the subject of these sales the Deputy Commissioner remarks : " there has been very little income from the sale of timber, because the unreserved kinds are ample for the wants of the people, and because a great quantity is available from Izarah villages, and from land cleared for cultivation."

Regarding the district reserves he writes : "the land which is to constitute our future reserves has been determined, and steps are being taken to demarcate the blocks and protect them from fire. I do not expect any income from these reserves for some years to come, but I hope that at the end of the year, I shall be able to show that something has been done towards reproduction, and for making these reserves fit to bear the demand, which before many years is sure to be made on them."

Basim District Forests. Operations of the year.

56. There has been a decrease of Rupees 4,654 in the revenue of the Basim district due chiefly to a large falling-off in the receipts from fruit sales. The mango crop was almost an entire failure.

A tract of waste land containing about 4,000 acres has been added to the district reserves during the year, making the total area of these forests amount to 30 square miles—430 acres.

Revenue of State and District Forests.

57. In accordance with the instructions contained in para. 7 of the review by the Government of India of the Forest Report for 1874-75,

I give below a statement showing the receipts and expenditure of the district forests separately from those of the reserves :—

	Revenue for 1875-76.			Expenditure for 1875-76.			Surplus.			Deficit.		
Northern Division.												
State Forests	81,475	4	11	35,172	0	9	46,303	4	2	...	...	...
District Forests	80,027	3	10	34,476	1	0	45,551	2	10	...	...	...
Total ...	1,61,502	8	9	69,648	1	9	91,854	7	0	...	...	...
Southern Division.												
State Forests	3,513	8	6	13,431	13	11	...	...	...	9,918	5	5
District Forests	67,800	6	10	7,793	0	0	60,007	6	10	...	...	...
Total ...	71,313	15	4	21,224	13	11	50,089	1	5	...	...	...
Grand Total ...	2,32,816	8	1	90,872	15	8	1,41,943	8	5	...	...	...

The figures under State Forests in the Northern Division include the revenue and expenditure of the unreserved forests of the Melghat, as these forests are managed directly by the Forest Department.

The pay and travelling allowances of the controlling and office establishments, as well as the contingencies of the Department, have been debited half to State Forests and half to District Forests.*

PART II.—GENERAL.

HEAD I.—FINANCIAL RESULTS.

Financial Results Comparison with previous year.

58. The subjoined statement shows the financial results of the year, compared with those of 1874-75 :—

Year.		Receipts. RS.	A.	P.		Expenditure. RS.	A.	P.		Surplus. RS.	A.	P.
1874-75	...	2,60,673	11	10	...	91,389	5	11	...	1,69,284	5	11
1875-76	...	2,32,816	8	1	...	90,872	15	8	...	1,41,943	8	5

There has thus been a decrease in receipts of Rupees 27,857-3-9, and in expenditure of Rupees 516-6-3. No explanation is required for the slight difference in expenditure. The decrease in receipts is due for the most part to a large falling-off in the proceeds from sale of fruits in district forests. The mango crop throughout the province was almost a complete failure, which of course could not be foreseen at the time the estimate was prepared. According to Form No. 28, the net results of the year's transactions amount to Rupees 1,40,658-15-6. The figures for 1874-75 were Rupees 1,64,444-3-1.

Comparison of actuals with estimate.

59. If the actuals of the year be compared with the regular estimate, there will appear a decrease in receipts of Rupees 28,083-7-11, and in expenditure of Rupees 20,604-0-4, or, in other words, the receipts have decreased 10 per cent., and the expenditure 18 per cent. :—

		Regular Estimate. RS.	A.	P.	Actuals. RS.	A.	P.	Increase.	Decrease. RS.	A.	P.
1875-76...	Receipts	2,60,900	0	0	2,32,816	8	1	...	28,083	7	11
	Expenditure	1,11,477	0	0	90,872	15	8	...	20,604	0	4

The reasons for the above differences are given in detail in the following statement :—

CLASSIFICATION.	Regular Estimate for 1875-76.			Actual for 1875-76.			Increase.			Decrease.			Cause of increase and decrease
	RS	A.	P.	RS.	A.	P.	RS.	A.	P.	RS	A.	P.	
RECEIPTS.													
I. Revenue from wood	85,600	0	0	89,587	10	0	3,987	10	0	...	...	..	Larger receipts from Melghat unreserved forests than were anticipated.
II. Revenue from minor produce	1,71,950	0	0	1,41,610	11	3	...	...	...	30,339	4	9	Decrease in proceeds from sale of fruits.
IV. Miscellaneous	3,350	0	0	1,618	2	10	...	...	...	1,731	13	2	
Total Receipts..	2,60,900	0	0	2,32,816	8	1	3,987	10	0	32,071	1	11	28,083-7-11. Net decrease.
EXPENDITURE.													
A.—Conservancy and Works.													
I. Cost of timber operations	4,500	0	0	1,184	14	7	...	...	...	3,315	1	5	Small demand for teak, and therefore felling operations restricted.
II Cost of collecting minor produce	11,676	0	0	8,744	2	10	...	...	...	2,931	13	2	Saving under Temporary Establishment.
III. Cost of forest organization	2,100	0	0	1,253	10	6	...	...	...	846	5	6	Kelapur Reserve remained undemarcated owing to settlement of rights not being completed.
IV. Cost of the treatment and creation of forests ...	13,450	0	0	7,013	12	1	...	...	...	6,436	3	11	Large savings under plantations, the cause of which has been explained in the body of the report.
V. Rent of leased forests	17,120	0	0	17,119	12	0	...	...	...	...	4	0	
VII. Works and utility for the development of forests ..	4,200	0	0	2,264	12	1	...	..	...	1,935	3	11	Several Thannas have still to be erected in the Bairagarh reserve and in the Melghat Wood Bazaars.
VIII. Cost of Departmental cattle	2,800	0	0	2,326	12	9	...	..	...	473	3	3	
IX. Cost of Departmental plant and tools	1,280	0	0	1,128	3	10	...	..	.	151	12	2	
X. Miscellaneous charges	1,170	0	0	1,250	11	11	80	11	11	...	..	..	
Total of A.—Conservancy and Works ...	58,296	0	0	42,286	12	7	80	11	11	16,089	15	4	16,009-3-5. Net decrease.
B.—Establishments.													
I. Salaries	41,200	0	0	38,785	11	2	..	..	..	2,414	4	10	Deputy Conservator's pay was drawn at Rs. 500 instead of Rs 700 *per mensem* estimated. Special allowance was separately budgetted for.
II. Travelling allowances	7,100	0	0	6,146	3	1	...	.	..	953	12	11	Saving chiefly under sundries.
III. Contingencies	4,881	0	0	3,654	4	10	...		.	1,226	11	2	
Total of B.—Establishments ...	53,181	0	0	48,586	3	1	...			4,594	12	11	4,594-12-11 } Net decrease.
Grand total of all expenditure ...	1,11,477	0	0	90,872	15	8	80	11	11	20,684	12	3	20,604-0-4 } Net decrease.

HEAD II.—GENERAL REMARKS.

Fibre of Banhinia creeper

60. In para. 86 of the report for 1874-75, I mentioned having sent a quantity of the fibre of the Banhinia creeper to Messrs. Nicol and Co. of Bombay for valuation.

The following is a copy of the report I received from them on the subject:—

"A good paper material which would compete with Adansonia fibre and bring probably £10 to £11 per ton, but without having it properly tested by a paper maker, we cannot give exact value. It must also be obtainable in large quantities, say not less than 100 tons per month. Our friends add that the fibre is not suitable for rope making, and they do not suppose that it would be worthwhile shipping to sell for paper making."

Under present circumstances, it would, I fancy, hardly pay to export the fibre, but on the completion of the Pili road, I purpose shipping a sufficient quantity of the fibre to England to enable a proper test to be made, and to ascertain the exact value of the material for paper making.

Health of establishment.

There has not been so much sickness in the Department as in previous years, although I have to record the death of two of the senior Darogas—Sillaman Khan of the Garu-Mattergaon reserve, and Syed Ismail of the Akola district forests.

During the year each subordinate was furnished with a small supply of fever medicine, and it is to this that I attribute the general good health of the establishment. Formerly medicine used to be distributed through the Jemadars, but under this system, I believe, the medicine seldom went beyond these men, or used to be given to the Watchers when they were too ill to benefit much by it.

62. I have been ably assisted during the year by Messrs. Prevost and Ballantyne. The subordinate establishments have also worked well.

(Signed) A. T. DRYSDALE,

Deputy Conservator of Forests,

Hyderabad Assigned Districts.

APPENDICES.

APPENDIX A.

List of Permanent and Temporary Establishments.

PERMANENT.

NORTHERN DIVISION.

			Rs
1	Deputy Conservator		700
1	Sub-Assistant Conservator		300
	Office Establishment.		
1	English Clerk	100	
1	Do.	70	
1	Do.	40	
1	Karkun	50	
1	Do.	20	
2	Orderly Peons @ 6 Rupees each	12	
1	Office Sweeper	3	
1	Native Doctor	50	
1	Compounder	10	
1	Bhisti	4	
1	Hospital Sweeper	7	
			366
	Treasury Guard.		
1	Dafadar	10	
4	Constables or peons @ 7 Rupees each	28	
			38

CONSERVANCY ESTABLISHMENT.

	Melghat Bairagarh Reserve.		
1	Daroga, 2nd Class	80	
1	Jamadar, 1st do	35	
2	Jamadars, 2nd do. @ 25 Rupees each	50	
3	Watchers, 1st do @ 15 „	45	
3	Do, 2nd do @ 12 „	36	
12	Do., 3rd do @ 8 „	96	
			342
	Melghat Unreserved Forests		
1	Daroga, 4th Class	50	
1	Jamadar, 1st do.	35	
1	Watcher, do.	15	
15	Watchers, 2nd Class @ 12 Rupees each	180	
1	Karkun	25	
1	Watcher, 3rd Class	8	
1	Peon	8	
			321
	Ellichpur District		
1	Jamadar, 1st Class	35	
1	Watcher, do.	15	
1	Do., 2nd Class	12	
1	Do., 3rd do.	8	
			70
	Carried over ..		2,137

		Rs.
	Brought forward...	2,137

NORTHERN DIVISION.—(*Concluded.*)

Amraoti District.

1	Daroga, 1st Class	100	
1	Watcher, do.	15	
3	Watchers, 2nd Class @ 12 Rupees each	36	
1	Do., 3rd do.	8	
			159

Akola District.

1	Daroga, 3rd Class	60	
1	Watcher, 1st do.	15	
3	Watchers, 2nd do. @ 12 Rupees each	36	
1	Do., 3rd do	8	
			119

SOUTHERN DIVISION.

1	Assistant Conservator		250

Office Establishment.

1	English Clerk	50	
1	Karkun	25	
2	Orderly Peons @ 6 Rupees each	12	
			87

Garu-Matergaon Reserve.

1	Daroga, 3rd Class	60	
1	Watcher, 1st do.	15	
1	Do., 2nd do.	12	
1	Do., 3rd do.	8	
			95

Ghatbori Reserve

1	Jamadar, 1st Class	35	
1	Watcher, do.	15	
1	Do., 2nd Class	12	
1	Do., 3rd do.	8	
			70

Penganga Reserve.

1	Jamadar, 2nd Class	25	
1	Watcher, 1st do.	15	
2	Watchers, 3rd do. @ 8 Rupees each	16	
			56

Kinwat-Korat Reserve.

1	Daroga, 4th Class	50	
1	Jamadar, 2nd do.	25	
1	Watcher, 1st do....	15	
1	Do, 2nd do	12	
3	Watchers, 3rd do. @ 8 Rupees each	24	
			126

Kelapur Reserve.

1	Daroga, 4th Class...	50	
1	Watcher, 1st do.	15	
1	Do., 2nd do.	12	
1	Do., 3rd do.	8	
			85.
	Carried over ..		3,184

		Rs.
	Brought forward...	3,184

SOUTHERN DIVISION.—(*Concluded.*)

Buldana District.

1	Daroga, 4th Class...	50	
1	Watcher, 1st do....	15	
1	Do., 2nd do.	12	
1	Do., 3rd do.	8	
			85

Basim District.

2	Karkuns @ 20 Rupees each	40	
2	Watchers, 2nd Class @ Rupees 12 each	24	
6	Do., 3rd do. @ „ 8 do.	48	
			112

Wun District.

3	Karkuns @ Rupees 20 each	60	
3	Watchers, 2nd Class @ Rupees 12 each	36	
9	Do., 3rd do. @ „ 8 do.	72	
			168
	Total of Permanent Establishmentss ...		3,549

TEMPORARY.

Amraoti District.

2	Watchers, 2nd Class @ Rupees 12 each	24	
10	Do., 3rd do. @ „ 8 do.	80	
			104

MELGHAT.

Naka Establishment.

1	Inspector	120	
1	Karkun	25	
3	Do @ Rupees 20 each	60	
12	Do. @ „ 15 do.	180	
24	Peons @ „ 7 do.	168	
			553
	Total of Temporary Establishments ...		657

FORM No. XV.

FOREST DEPARTMENT, HYDERABAD ASSIGNED DISTRICTS.

Statement of Timber on hand on the 31st March 1876.

Name of Depot.	Description of Timber.	Quantity.		Estimated selling rate.	Estimated value.			Total per Depot.		
		Number of pieces.	Cubic feet.		Rs.	A.	P.	Rs.	A.	P.
Pili Bairagarh reserve	Teak of various sizes ...	294	69	At various rates.	135	12	0	135	12	0
Panala Penganga reserve	Do. do.	546	...		136	8	0	136	8	0
Ellichpur District Forests	Babul do.	3,537	...		313	0	0	313	0	0
Amraoti do	Do. do.	5,372	719		279	2	0	279	2	0
Wun do.	Wood of different kinds	1,335	...		240	6	0	240	6	0
		11,084	788		1,104	12	0	1,104	12	0

FORM No. XXI.

FOREST DEPARTMENT, BERAR.

Annual Summary of Revenue and Expenditure of the different Divisions during 1875-76.

CLASSIFICATION.	Direction.			Northern Division.			Southern Division.			Total.		
RECEIPTS.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
I.—*Revenue from Wood*—												
1. Brought to Depôt by Departmental Agency	...	...	...	...	...	...	...	...	...	...	...	...
(a.) Timber	...	...	...	7,853	14	0	1,797	14	8	9,651	12	8
(b.) Firewood and charcoal	...	...	...	801	13	9	60	3	2	862	0	11
(c) Sandalwood	...	...	...	...	...	...	...	...	...	...	...	...
2. Wood removed from the Forests by purchasers, license-holders, and permit-holders ...	...	...	...	...	...	...	...	...	...	...	...	...
(a.) Timber	...	...	...	66,111	4	3	3,351	2	4	69462	6	7
(b.) Firewood and charcoal	...	...	...	6,456	8	6	2,360	10	8	8,817	3	2
3. From confiscated, drift, and waif wood...	...	...	...	546	1	7	248	1	1	794	2	8
II.—*Revenue from Minor Produce*—												
1. Grazing dues and sale of grass	...	...	...	74,058	11	11	47,921	4	3	1,21,980	0	2
2. Other minor produce	...	...	...	4,661	4	10	14,969	6	3	19,630	11	1
III.—*Duty on Produce of Foreign or Private Forests imported into British Territory*—												
1. On wood	...	...	...	...	...	...	...	...	...	...	...	...
2. On other Forest produce...	...	...	...	...	...	...	...	...	...	...	...	...
IV.—*Miscellaneous*—												
1. From fines and forfeitures	...	...	...	118	1	8	71	13	0	189	14	8
2. From refunds to the Department	...	...	...	68	5	1	271	11	10	340	0	11
3. From other sources	...	...	...	826	7	2	261	12	1	1,088	3	3
Total Receipts...	...	...	...	1,61,502	8	9	71,313	15	4	2,32,816	8	1

EXPENDITURE.

A.—Conservancy and Works.

I.—*Cost of the Timber Operations*—			
1. On wood brought to Depot by Departmental Agency	...	...	...
(a.) Timber	1,113 4 7	71 10 0	1,184 14 7
(b.) Firewood and charcoal	...	...	...
(c.) Sandalwood	...	...	...
2. On wood removed from the Forests by purchasers, license-holders, and permit-holders	...	...	...
(a.) Timber	...	...	...
(b.) Firewood and charcoal	...	...	...
3. On confiscated, drift, and waif wood	...	...	...
II.—*Cost of collecting Minor Produce*—			
1. Grazing and sale of grass	8,706 3 10	37 15 0	8,744 2 10
2. Other Forest produce	...	...	...
III.—*Cost of Forest Organization*—			
1. Demarcation lines and boundary pillars or marks	440 15 9	812 10 9	1,253 10 6
2. Working plans	...	...	...
3. Surveys	...	...	...
IV.—*Cost of the treatment and creation of Forests*—			
1. Natural Forests	...	...	...
(a.) Protection from fire	798 13 0	584 14 8	1,383 11 8
(b.) Fencing and enclosing	...	...	...
(c.) Improvement and conservation	721 2 0	114 7 6	835 9 6
(d.) "Reboisement," or restoration of denuded areas	...	...	...
2. Artificial Forests	...	...	...
(a.) Formation	3,983 7 5	212 2 0	4,195 9 5
(b.) Protection from fire	184 12 0	...	184 12 0
(c.) Improvement and conservation	414 1 6	...	414 1 6
(d.) Fencing and enclosing	...	...	...
V.—*Rent of Leased Forests*—			
VI.—*Cost of collecting duty on produce of Foreign or Private Forests imported into British Territory*—			

FORM No. XXI.—*(Concluded.)*

FOREST DEPARTMENT, BERAR.

Annual Summary of Revenue and Expenditure of the different Divisions, during 1875-76.

CLASSIFICATION.	Direction.			Northern Division.			Southern Division.			Total.		
EXPENDITURE.—*(Concluded.)*	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
VII.—*Works of utility for the development of Forests—*												
1. Roads and Bridges ...	...	...	...	...	...	...	...	...	...	...	...	...
2. Buildings and Offices ...	...	...	...	845	6	5	424	5	0	1,269	11	5
3. Compensation for land taken up for forest purposes, or for extinction of forest rights ...	...	...	...	...	...	...	995	0	8	995	0	8
4. Other works ...	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—*Cost of Departmental Cattle*												
1. Purchase of Stock ...	...	...	...	...	...	...	...	...	...	...	...	...
2. Hire of Stock ...	...	...	...	...	...	...	...	...	...	...	...	...
3. Feed and keep of Cattle... ...	...	...	...	1,615	11	6	711	1	3	2,326	12	9
IX.—*Cost of Departmental Plant and Tools—*												
1. For Timber and Wood operations ...	...	...	...	1	0	0	...	...	...	1	0	0
2. For other purposes ...	...	...	...	408	7	10	718	12	0	1,127	3	10
X.—*Miscellaneous Charges.*												
1. Refunds ...	...	...	...	...	...	...	...	...	...	...	...	...
2. Law Charges ...	...	...	...	...	...	...	...	...	...	...	...	...
3. Other Charges ...	...	...	...	1,221	13	10	28	14	1	1,250	11	11
Total of A.—Conservancy and Works...	...	...	...	37,574	15	8	4,711	12	11	42,286	12	7
B.—ESTABLISHMENTS.												
I.—*Salaries* ...	...	...	...	25,988	3	10	12,797	7	4	38,785	11	2
II.—*Travelling Allowances* ...	...	...	...	3,520	5	5	2,625	13	8	6,146	3	1
III.—*Contingencies* ...	...	...	...	2,564	8	10	1,089	12	0	3,654	4	10
Total of B.—Establishment...	...	...	...	32,073	2	1	16,513	1	0	48,586	3	1
Grand Total of all Expenditure ..				69,648	1	9	21,224	13	11	90,872	15	8

No. XXII.

FOREST DEPARTMENT, BERAR.

Annual Abstract Account of the Cash transactions of the Forest Department, Berar.

Dr.

Year.	Heads of Account.	RS.	A.	P.	Amount. RS.	A.	P.
1875-76.	To Cash in hand on 1st April 1875—						
	Northern Division	855	9	2			
	Southern Division	4	9	10			
					860	3	0
	„ Revenue received—						
	Northern Division	1,61,502	8	9			
	Southern Division	71,313	15	4			
					2,32,816	8	1
	„ Remittances from State Treasuries—						
	Northern Division	68,508	3	5			
	Southern Division	22,390	14	1			
					90,899	1	6
	„ Deposits				...	...	..
	„ Advances recovered—						
	Northern Division	8,474	7	11			
	Southern Division	2,043	7	1			
					10,517	15	0
	„ Retrenchments—						
	Northern Division				...	...	.
	Southern Division				...	...	..
	Total... { Northern Division 2,39,340-13-3 / Southern Division 95,752-14-4 } ... Total				3,35,093	11	7

Cr.

Year.	Heads of Account.	RS.	A.	P.	Amount. RS.	A.	P.
1875-76.	By Expenditure of the Department—						
	Northern Division	69,648	1	9			
	Southern Division	21,224	13	11			
					90,872	15	8
	„ Remittances to State Treasuries—						
	Northern Division	1,61,502	7	3			
	Southern Division	71,379	6	6			
					2,32,881	13	9
	„ Repayments of Deposits				...	...	..
	„ Amounts transferred—						
	Northern Division	...			...	...	...
	Southern Division	...			...	...	...
	„ Advances made—						
	Northern Division	8,190	4	3			
	Southern Division	3,075	0	0			
					11,265	4	3
	„ Refunds of Revenue—						
	Northern Division	...			..	...	..
	Southern Division	...			...	..	..
	„ Cheques cancelled—						
	Northern Division	...			...	...	...
	Southern Division	...			...	...	...
	„ Cash Balance in hand on 31st March 1876—						
	Northern Division	...		..			
	Southern Division	73	9	11	73	9	11
	Total. { Northern Division 2,39,340-13-3 / Southern Division 95,752-14-4 } ... Total				3,35,093	11	7

No. XXIII.

FOREST DEPARTMENT, BERAR.

Annual Statement of Outstandings and Liabilities of the Department on account of Contractors and Disbursers.

Division.	Department Debtor.				Department Creditor.				Balances Due.	
	At commencement of year.	Recoveries in cash, and value of supplies and work done during year.	At close of year.		At commencement of year.	Payments made during year.	At close of year.		To Department (outstanding.)	By Department (liabilities)
		RS. A. P.	RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.		RS. A. P.	
Northern Division.										
Forest Officers	.....	7,468 14 9	7,468 14 9		1,452 12 4	7,890 4 3	9,343 0 7		1,874 1 10	
Deputy Commissioners	.....	1,005 9 2	1,005 9 2		1,157 9 11	300 0 0	1,457 9 11		452 0 9	
Southern Division.										
Forest Officers	.....	1,738 5 1	1,738 5 1		1,059 2 11	2,875 0 0	3,934 2 11		2,195 13 10	
Deputy Commissioners	.....	305 2 0	305 2 0		995 14 8	200 0 0	1,195 14 8		890 12 8	
Total ...	.....	10,517 15 0	10,517 15 0		4,665 7 10	11,265 4 3	15,930 12 1		5,412 13 1	

FORM No. XXIII-A.

FOREST DEPARTMENT, BERAR.

Annual Statement of Outstandings on Sale Accounts.

Division	Outstandings at commencement of year			Value of timber sold during the year			Total.			Recoveries made during the year.			Outstandings.		
	RS.	A	P.	RS.	A.	P.	RS.	A.	P.	RS.	A	P.	RS.	A	P
Northern Division	2,118	15	6	6,986	7	0	9,105	6	6	7,682	14	0	1,422	8	6
Southern Division	419	0	0	404	3	0	823	3	0	404	3	0	419	0	0
Total ...	2,537	15	6	7,390	10	0	9,928	9	6	8,087	1	0	1,841	8	6

No. XXIV.

FOREST DEPARTMENT, BERAR.

Statement of Timber brought to Depots from the different Forest Divisions during 1875-76.

Name of river or division	Forest.	Description of timber.	Pieces.	Cubic Feet	Totals of each River.	
					Pieces.	Cubic Feet
Northern Division	Pili Bairagarh reserve... ...	Teak of various sizes	17,701	798	17,701	798
	Amraoti District Forests ...	Babul of various sizes	13,683	3,291	13,683	3,291
	Akola District Forests ...	Do. do. ...	3,430	...	3,430	...
Southern Division	Panala Penganga reserve ...	Teak of various sizes.	2,142	...	2,142	...
	Wun District Forests ...	Wood of various description ...	2,970	...	2,970	...
		Total ..	39,926	4,089	39,926	4,089

FORM No. XXV.

FOREST DEPARTMENT, BERAR.

Annual Timber Account for 1875-76.

Particulars.	Pieces.	Total.
I.—Stock in hand at the following Depôts at the commencement of the year :—		
Pili Bairagarh reserve	1,213	
Panala Penganga reserve	103	
Ellichpur District Forests	17,274	
Amraoti do.	3,708	
Akola do.	95	
Wun do.	2,164	
		24,557
II.—Timber received at Depôts from the Forests :—		
Pili Bairagarh reserve	17,701	
Panala Penganga reserve	2,142	
Amraoti District Forests	13,683	
Akola do.	3,430	
Wun do.	2,970	
		39,926
Total ...	.	64,483

Particulars.	Pieces.	Total.
I.—Timber removed by purchasers from Depôts :—		
Pili Bairagarh reserve	18,620	
Panala Penganga reserve	1,699	
Ellichpur District Forests	13,737	
Amraoti do.	12,019	
Akola do.	3,525	
Wun do.	3,799	
		53,399
II.—Timber lost	...	
III.—Stock in hand at the close of the year at the following Depôts :—		
Pili Bairagarh reserve	294	
Panala Penganga reserve	546	
Ellichpur District Forests	3,537	
Amraoti do.	5,372	
Wun do.	1,335	
		11,084
Total ..	..	64,483

FORM No. XXVI.

FOREST DEPARTMENT, BERAR.

Statement showing the amount realized on account of the different classes of Timber sold during 1875-76.

Divisions.	Number of logs sold.	Cubical contents.	Amount realized and due on account of timber sold.			Average amount per log.			Average cubical contents of logs.	Average amount per 100 cubic feet.		
		Cubic foot.	RS.	A.	P.	RS.	A.	P.	Cubic foot.	RS.	A.	P.
Northern Division	47,901	Wood too small to calculate the cubical contents.	9,105	6	6	0	3	1	.....	.....		
Southern Division	5 498		823	3	0	0	2	4	.....	.....		
Total	53,399		9,928	9	6	0	2	11	.....	.....		

Remarks.	Pieces.
Timber sold in previous years remaining unremoved at the commencement of the year... ...	
Timber sold during the year.	53,399
Total ...	53,399
Timber remained unremoved at the close of the year ...	...
Balance removed from Depôts by purchasers during the year ...	53,399

Deduct—Amount due, but not realized during the year	1,841	8	6
Balance ...	8,087	1	0
Add—Amount collected by District Officers	1,564	11	8
Total shown as revenue on account of timber sales	9,651	12	8

FORM No. XXVII.

FOREST DEPARTMENT, BERAR.

Statement showing the amount expended on account of Timber received from the different Forest divisions during 1875-76.

Name of Division.	No. of logs.	Cubical contents.	Timber expenses.	Conservancy expenses, cost of establishment, &c., of the department, excluding direction	Total amount expended, including direction.	Average amount paid per log.	Average cubic contents per log.	Average amount paid per 100 cubic feet.	Remarks.
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.			
Northern Division ..	34,814	Wood too small to calculate the cubical contents.	1,113 4 7	2,855 9 10	3,968 14 5	0 1 9	..	Cannot be shown, as the cubical contents of the greater portion of timber has not been calculated.	*Abstract value per 100 pieces.*
Southern Division ...	5,112		71 10 0	881 6 1	953 0 1	0 2 11	...		
Total ..	39,926		1,184 14 7	3,736 15 11	4,921 14 6	0 1 11	...		
Add—Direction Charges ...	...		.....	.....	.....	.....	.....		
Grand total...	...		.....	.....	.....	.....	.....		

	1875-76.			187 -7		
	RS.	A.	P.	RS.	A.	P.
Timber expenses ...	2	15	5	...		
1-24th* Conservancy and establishment ...	9	5	9	...		
Direction ...	...			...		
Total ..	12	5	2	...		

Only 1-24th of the expenditure under other Budget heads is added, because the proportion borne by the Revenue under Head I. to the total Revenue is as one to twenty-four.

(REVISED) FORM No. XXVIII.

Annual Account of Forest Revenue for 1875-76.

Receipts.	Amount. RS.	A.	P.	Disbursements.	Amount. RS.	A.	P.
Amount of Revenue realized in 1875-76...	2,32,816	8	1	Amount disbursed in 1875-76	90,872	15	8
Deduct—				*Deduct—*			
Amount realized on account of previous periods	2,537	15	6	Amount disbursed on account of transactions of former periods.	5,525	10	10
Balance ...	2,30,278	8	7	Balance ...	85,347	4	10
Add—				*Add—*			
Outstandings on account of the year	1,841	8	6	Amount due for transactions during the year under review, but not yet disbursed...	5,486	7	0
Value of the year's transactions ...	2,32,120	1	1	Real cost of the year's transactions ..	90,833	11	10

	RS.	A.	P.
Value of the year's transactions	2,32,120	1	1
Cost of the year's transactions	90,833	11	10
Balance...	1,41,286	5	3
Deduct.—Difference between the value of stock at the commencement and close of the year	627	5	9
Nett results of the year ...	1,40,658	15	6

A. T. DRYSDALE,
Deputy Conservator of Forests,
Berar.

From the Commissioner, Hyderabad Assigned Districts, to the Second Assistant Resident, Hyderabad, (No. 2189-254.)—Dated Amraoti, 26th June 1876.

SIR,—I have the honor to submit the report on the administration of the Forest, Hyderabad Assigned Districts, for the year 1875-76, with the following remarks.

2. The area of the State Forests remains the same as in the previous year, *i. e.*:—

Northern Division	...	... 400 square miles.
Southern do.	...	... 261 do.
	Total	... 661 do.

3. The modification in the boundaries of the Bairagarh reserve (Northern Division), carried out by the Deputy Conservator during the year, was attended with several advantages, in so far that cultivation and unproductive jungle were excluded, and waste land, with promising timber on it, was brought within the reserve. We have also gained by exchanging 61 miles of cut or artificial, and 26 miles of natural, boundaries for 26 miles of artificial, and 61 miles of natural boundaries, while 21 of the 26 miles form the boundary between the Assigned Districts and the Central Provinces.

4. In the Southern Division the demarcation of the Penganga reserve has been completed at a cost of Rupees 318, while two-thirds of the Kinwat reserve have been defined at a small cost of Rupees 213. The remaining third has probably by this time been completed.

5. The leased villages embraced within the proposed limits of the Kelapur reserve, Wun district, have caused a good deal of trouble in dealing with that reserve; but I have issued instructions to the Deputy Commissioner to arrange at once either for the exclusion of these villages, and should that not be possible without cutting up the reserve to too great an extent, then for their appropriation, the owners being compensated for the same.

6. The following are the correct statistics of cultivation within the Bairagarh reserve at the close of 1874-75 :—

Number of inhabited villages	92
Population	6,843 souls.
Cultivated area	9,480 acres.
Cattle	6,087 head.

During 1875-76 these were reduced to—

Inhabited villages	68
Population	5,105
Cultivated area	7,275

The cause of reduction in the number of inhabited villages is fully explained by the Deputy Conservator: thus 10 villages were excluded from the reserve, and 14 were deserted because of the impoverishment of the soil. This latter cause will induce the people in the reserve to move off gradually to other localities where they can obtain virgin soil for the poor crops they cultivate.

7. The Kinwat reserve southern division is free from all rights, and arrangements are now being made to commute the grazing rights in the Garoo Mattergaon, the Ghatbori, and the Penganga reserves, which extend over an area aggregating 6,747 acres.

8. Of 499 persons prosecuted during the year for breaches of forest rules, 436 were convicted.

9. The following figures show the cost of protecting the reserves from fire during the past and previous years:—

Year.	Area protected acres	Cost
1874-75 ...	364,800	3,943
1875-76 ..	458,280	1,561

But it must be understood that the item Rupees 3,943 includes the expenditure on this account for previous years.

The Raipoor block has now been successfully protected for seven years. In the Bairagarh reserve a fire broke out, but was extinguished before any harm was done: reproduction therefore progresses favourably.

10. It is satisfactory to learn from the Deputy Conservator's 23rd para. that the Patels and people of villages bordering the Kinwat reserve have interested themselves much in protecting that reserve from fire.

11. The area under plantations in both divisions at close of 1874-75 was 2,338 acres: this was reduced during 1875-76 by 1,375 acres, which were insufficiently stocked, leaving an area at close of the year under report of 963 acres. The total expenditure from the commencement up to end of 1875-76 on this account was Rupees 28,846. The reduction in the area was carried out under the orders of the Government of India, which directed that all area was to be excluded which was not completely stocked.

12. In his 28th para. Mr. Drysdale alludes to the change of climate in the Bairagarh reserve brought about by our system of fire conservancy. Frosts, previously almost unknown, now occur annually, especially in lowlying lands, and destroy thousands of young plants.

13. The area of unreserved forests, which in 1874-75 was 3,874 acres, has been slightly reduced to 3,818 acres: this reduction is in part due to an error in one of the district statements. No 4 block of the Melghat unreserves was opened on 1st June 1875 for cutting reserved kinds of timber. The total number of pieces exported was 159,185, on which a duty was levied of 16,140 Rupees, being a decrease in pieces of 60,202 and in revenue of Rupees 9,189. This decrease is due to the exemption of Central Provinces' teak from duty at our nakas, and, to some small extent, to the decrease in the price of cotton during the year.

14 The exports of produce from the Melghat unreserved forests realized a revenue of Rupees 19,263, being an increase over the previous year of Rupees 1,712.

15. In his 47th para., Mr. Drysdale describes the steps he has taken to render forest conservancy as little inconvenient as possible to the inhabitants of the Melghat, of whom some few families had emigrated into the Central Provinces. His proposals were cordially assented to by myself, and I am glad to say they received the approval and sanction of the Resident.

16. With reference to the experiment alluded to by the Deputy Conservator in his 51st para, I think it right to state that the results can hardly be ascertained until next cold season: what most of us can remember as a snipe *jheel* has during the past few years become perfectly dry by November, and the universal belief among the people is that the Barbel trees have been the cause. Having in the vicinity of Lonetake a very large supply of Barbel, the loss of a few trees would not signify, and therefore those which were growing by the margin of the former *jheel* have been uprooted during the past cold

season, and after the present rains we shall see whether the *jheel* dries up as it has latterly done, or whether it retains water as it used to do till March or April.

17. The financial results of the administration of the State and District forests during the year are as follows :—

				Rupees.
Surplus Revenue	...	...	...	2,32,816
Expenditure ...	...	...	...	90,878
		Surplus	...	1,41,943, being a

decrease on the previous year by about Rupees 27,000, due principally to a large decrease in the sale of fruit, the mango crop having been a total failure.

18. The Deputy Conservator justly acknowledges the services of his Assistants, Mr. Prevost and Mr. Ballantyne, while Mr. Drysdale himself merits the commendation of the Resident for the zeal and energy with which he conducts his important duties.

I have, &c.,

W. NEMBHARD, *Lieut.-Colonel,*

Commissioner, Hyderabad Assigned Districts.

No. 539 OF 1875-76.

Remarks by the Resident on the Report of Forest Administration in the Hyderabad Assigned Districts for the year 1875-76.

THE work of demarcating the State Forests in the Hyderabad Assigned Districts has progressed satisfactorily during the year. The demarcation of the Penganga reserve has been completed; good progress was made in demarcating the Kinwat Korat reserve, and the boundaries of the Bairagarh State reserve have been revised with the very satisfactory result of reducing the cut lines from 61 to 26 miles, and increasing the natural boundaries from 26 to 61 miles, while the area of the forest remains the same as before, namely, 661 square miles.

It is expected that by the end of the current year the whole of the State Forests in the Assigned Districts will be demarcated, with the one exception of the Kelapur reserve.

The Resident trusts that the question now pending between the Forest Department and the Izaradars holding leases of land in the latter reserve, may be speedily and equitably settled. A special report on this point should be submitted as soon as any definite proposals have been agreed upon.

2. The number of inhabited villages in the Bairagarh reserve is reduced from 92 to 68; the number of inhabitants from 6,843 to 5,105, and the cultivated area from 9,480 to 7,275 acres. Four of these villages were excluded in revising the boundaries; fourteen have been deserted, it is said, on account of the exhaustion of the soil, and six are omitted from the return as they are situated beyond the boundary line, and although holding a portion of land within the reserve, are, under the orders of Government, excluded from the exercise of forest rights.

The Resident does not doubt that the remaining inhabitants of this reserve will gradually move off in search of richer land, more especially as a large tract of unreserved forest has been thrown open to them as explained at para. 47.

The small cultivated area within the Kinwat Korat reserve was resumed during the year at a cost of Rupees 1,147-9-8 equal to Rupees 6-4-4 per acre. This forest is now free from all inhabitants.

An additional area of 93,480 acres was protected from fire during the year, bringing the total protected area up to 458,280 acres. The expenditure on this account up to date is Rupees 5,503-14-3. The statement given at para. 13 shows for the first time the number of years during which protective arrangements against fire have been in force in each reserve. These measures have been entirely successful in two cases, namely, the Raipur block and the Bairagarh reserve comprising in all 256,000 acres, the trees in which have been untouched by fire for 7 and 5 years respectively. The figures for the other reserves should show not the number of years they have been protected, but for how many consecutive years they have escaped fire, this being the information required by the Government of India.

The results of the efforts of the Deputy Conservator and his subordinates to keep down forest fires are very encouraging, and merit special acknowledgment.

3. The total area of plantations is 2,338½ acres. Of this 1,375½ acres are not fully stocked, but have still a fair number of young trees coming on. One hundred and forty-four acres were added during the year under report. These are omitted from the return however as the success of the plants is not yet certain. A nursery has been formed at Kolkaz on the banks of the Seepna river for teak seedlings. Forty seers of Burmah teak seed were sown in this nursery, and are said to have germinated better than the indigenous seed. It is satisfactory to find that the natural reproduction of teak is progressing so rapidly, as evidenced by the fact that about 200,000 young self-sown plants were found in one block, the clearance of which from grass is stated to have been effected for the small outlay of Rupees 385-15-0. The remarks at para. 28 on the change of climate in the Melghat since the introduction of arrangements for the exclusion of fire from the forests, and on the damage caused annually in consequence to young seedlings by frost, show that the subject demands the attention Mr. Drysdale is bestowing upon it. The frost is apparently not sufficiently keen to penetrate with any force where plants are protected by surrounding vegetation, and the proposal to plant out strong two year old seedlings irregularly in suitable places where there is room for them, instead of, as formerly, clearing the land of every description of growth, and planting in lines at fixed distances, will no doubt to a great extent be effectual in protecting the plantations from the effects of the cold.

4. The timber operations in the reserved forests have been limited to some coppicing of badly grown teak in the Bairagarh reserve, 12,000 trees being cut down, which realized on sale Rupees 6,986-7-0. In the Southern division the only operations were cutting 822 goles and 1,320 bullees in the Pengauga reserve, all of which were not sold at the end of the year.

5. A mistake crept into the returns of the past year showing the extent of the district reserved and unreserved forests. The correct area for the year under report is 3,818 square miles and 439 acres.

Block No. 4 of the Melghat unreserved forest was opened during the year, the reserved produce exported therefrom amounting to 159,185 pieces of timber, the duty on which was Rupees 16,440-3-6.

There has been a considerable falling-off in the demand for timber which the Deputy Conservator perhaps correctly attributes to imports from the Central Provinces, and to a fall in the price of cotton, on which the Department's best customers—the Kunbis—are dependent. The latter reason is probably the one which has chiefly affected the sale of timbers, for not only has the price of cotton fallen, but the late crop was a peculiarly short one, the out-turn in some places being only a fourth of the average. It is satisfactory to observe however that the receipts for unreserved produce exported from the Melghat were Rupees 1,712-6-9 in excess of the amount received in 1874-75.

The rules for regulating the cutting of bamboos introduced in January last appear to have had the good effect of causing the utilization of the dry bamboos in the forests which would otherwise have been left to rot. Under these rules the cutting of green bamboos is allowed in only three blocks at a time, while dry bamboos may be taken from any part of the forests. The total exports increased from 1,396,116 pieces in 1874-75 to 1,447,660 in the past year.

6. The establishment in the Melghat unreserved forest was increased during the year by the appointment of a Darogah and 14 2nd Class Watchers at an additional cost of Rupees 2,220. The Deputy Conservator was able with this addition to his establishment to exercise greater vigilance and enforce a more rigid system of conservancy. The effect was not however altogether satisfactory. It soon became evident that the hill people felt the change, and many of them, rather than be subjected to a continuance of so close an espionage, emigrated to the neighbouring districts of the Central Provinces. It is to Mr. Drysdale's credit that before the evil had spread to any great extent he saw the cause, and devised measures for its remedy. The Resident has every reason to hope that the arrangements detailed in para. 47 of the report on this head, which received his sanction in May last, will lead to the complete restoration of contentment among these people. The strict conservancy system is now confined to an area of 300 square miles. The remaining 800 square miles are thrown open to the hill people and others for the extension of cultivation, and the supply of forest produce, the only restriction being that the cutting of bamboo and teak is restricted to the inhabitants of the Melghat—a precaution which was necessary to prevent the wholesale felling of trees by Bunjaras, Mooltanees, and others who would have greedily availed themselves of the privilege had it been extended more generally. Produce exported from this tract to the plains has of course as hitherto to pay duty.

7. The result of the experiment referred to at para. 51 with regard to the effect of plantations of Babul trees on the water supply in their vicinity, will be more apparent next year, and should be very carefully watched and reported upon. The Deputy Conservator's proposals at para. 52 in regard to the Amraoti reserve are approved of, and the Resident trusts it will be found possible to form this reserve into a more compact area than it is at present.

8. The financial results of the year are not so satisfactory as hitherto, there being a decrease in receipts of Rupees 27,857-3-9. The falling-off however is due mainly to a failure of the mango crop, and could not have been either foreseen or prevented. The receipts in the Northern division from State and District forests are almost equal, being Rupees 81,475-4-11, and Rupees 80,027-3-10 respectively. In the Southern division on the other hand the receipts for produce from the district forests amounted to Rupees 67,800-6-10, while the State forests yielded only Rupees 3,513-8-6. The net surplus revenue for the year is Rupees 1,41,943-8-5.

9. The report given at para. 60 on the Bauhinian creeper, as a substance suited for the manufacture of paper, is not on the whole unfavorable, and the Resident will be glad to see a larger quantity of it sent home for trial as proposed by the Deputy Conservator.

It is satisfactory to learn that there was less sickness in the Department during the past season than formerly, notwithstanding that the year was marked by a severe cholera epidemic in the province, accompanied by a good deal of general sickness. Too much attention cannot be given to the free dispensing of medicines among the subordinates of the Department. With this object in view the Resident recently sanctioned the purchase of a Moore's medicine chest for the use of the Sub-Assistant Conservator in the Melghat which no doubt will be found very useful.

The report which has been reviewed in the foregoing remarks has been perused with attention by the Resident, and is, in his opinion, fairly satisfactory. Sir R. Meade notices with satisfaction the intelligent interest which Mr. Drysdale appears to take in all matters connected with his important duties, and has much pleasure in acknowledging the zeal and energy with which he has superintended and directed the work of his Department during the past year.

(By Order.)

HYDERABAD RESIDENCY,
The 21st August 1876.

A. J. DUNLOP,
Offg. Second Asst. Resident.

No.

FROM

THE HON'BLE T. C. HOPE,

Offg. Secretary to the Government of India,

To

THE RESIDENT AT HYDERABAD.

Department of Revenue, Agriculture, and Commerce.

Forests.

SIMLA, *the* *November* 1876.

SIR,

I AM directed to acknowledge the receipt of your letter No. 27, dated the 22nd August last, forwarding the annual report of the Forest Department in the Hyderabad Assigned Districts for 1875-76, and to communicate the following observations and orders by the Government of India.

2. The progress made in protecting the reserves from fire is satisfactory; it is understood that the whole of the Bairagarh reserve has now been protected during five consecutive years, and a portion of it—the Raipur block—for seven years. The views of the Government of India, as stated in paragraph 3 of the letter from this Department, No. 1244, dated the 1st December 1875, that the number of consecutive years during which a forest has been protected from fire should be entered in the annual statement, have been correctly interpreted in your remarks on the report. The information given by the Deputy Conservator shows the number of years during which protective measures have been adopted, without reference to their success or failure. This information is of no interest whatever, and, as the Deputy Conservator himself suggests, no forests should be entered in the statement as protected during a number of years that have not been entirely and without interruption protected during that period. It is gratifying to learn from paragraph 16 of Mr. Drysdale's report that the Bairagarh reserve is now protected with greater facility than in former years, and that a large increase in the number of young trees of teak and tewns (*Ougeinia dalbergioides*) has been reported since fire protection was commenced. The erection of buildings for the accommodation of the subordinate establishments posted in the reserves is satisfactory, and is in accordance with the orders of the Government of India on the Forest Report for 1874-75.

3. The Hon'ble the President in Council approves of the commencement made of registering a series of regular meteorological observations taken in the Melghât, and the Deputy Conservator should place himself in communication with the Meteorological Reporter to the Government of India, and arrange the stations at which observations should be taken and the methods of recording them under his instructions. It is probable that if a correct system of observations is carried out at two corresponding stations, one inside and the other outside the block protected from fire, a few years' records will show whether the changes of climate in the protected block have been as considerable as reported by the Deputy Conservator.

4. In the statement given in paragraph 38 of the report the district reserves are included under unreserved forests: this is the first report in which the areas of these district reserves are entered separately. From the explanation given it appears that the land included in district reserves is intended to be kept under forest, and is not available for cultivation. They are therefore reserved forests, though they are not placed under the charge of forest but district officers, and should be classed under reserves and not under district forests, which latter, as Mr. Drysdale explains, will diminish in area as cultivation increases. With reference to this subject, I am directed to request that the attention of the Deputy Conservator may be directed to the definition given of reserved and unreserved forests in the Circular of the Government of India, No. 29, dated the 11th December 1875, forwarding a copy of a memorandum by the Inspector General of Forests on forest legislation in India, and to the orders of the Government of India on the North-Western Provinces Forest Report for 1874-75, a copy of which is herewith forwarded, and which also contains instructions on this subject. The revenue and charges on account of the unreserved forests in the Melghât are classed (paragraph 57) with those of the reserves, as explained by the Deputy Conservator, because these forests are managed directly by the Forest Department. This however is not in accordance with the orders of Government on the report for 1874-75 (paragraph 7), which directed that the receipts and charges of the reserves in the two forest divisions should be shown separate from those of the unreserved forests. The unreserved forests of the Melghât are open to the extension of cultivation; they are not reserved nor are they separately demarcated, and consequently they should not be classed with the reserves.

5. The arrangements concerning the abandonment of a regular working plan for, combined with strict protection of, the whole unreserved forest area of the Melghât, estimated at 1,100 square miles, and the selection out of that area of 300 square miles as a district reserve, have already been brought to the notice of the Government of India in your Proceedings for May 1876, Nos. 1 and 2 (Forests). I am directed to inform you that the change of policy with regard to the unreserved forests of the Melghât sanctioned by you is approved. The Government of India has on several occasions urged the expediency of concentrating forest conservancy upon limited areas, and the Hon'ble the President in Council feels assured that much more satisfactory results will be obtained, with less inconvenience to the people, by the strict protection of limited reserves than by attempting forest conservancy over vast areas. At the same time it appears probable that all changes in the general forest policy are likely to unsettle the minds of the people living in the vicinity of the forests, and should therefore be avoided as much as possible; but the policy now initiated seems to be in the right direction and should be maintained.

6 The Hon'ble the President in Council has noticed the remarks made in paragraph 51 of Mr. Drysdale's report, and in your own and the Commissioner's remarks, on the drying up of a nullah owing to the growth of babul in its vicinity. This is a subject however upon which it is not advisable to base any conclusions upon the experience of a few seasons only. There appears to be no doubt that fast growing trees have been used and may be used to dry a stagnating swamp, but the effects only become manifest when the trees grow on the moist ground and after a considerable time.

7. The receipts and charges for the year have been as follows, compared with those of 1874-75.—

		1874-75. Rs.	1875-76. Rs.
Receipts	.. ..	2,60,674	2,32,817
Charges	A	45,514	42,287
	B	45,875	48,586
	Total ...	91,389	90,873
	Surplus ...	1,69,285	1,41,944

8. The comparison of the actuals with the estimates given in paragraph 59 of this report should in future be omitted from the annual reports, as their discussion belongs properly to the annual statements of "actuals." The transactions of the year, exhibited under the great main heads of Revenue and Expenditure, appear to have been as follows :

	Receipts.	Rupees.	Charges	Rupees
I.—Departmental timber operations.	I, 1 and 3 ...	11,308	I, 1 and 3, half of VIII, IX and B.	27,205
II —Other revenue ...	I, 2; II, III and IV	2,21,509	II; V; X; one quarter of VIII, IX and B.	40,125
III —Formation, protection, and improvement of forests.	.....	...	III; IV; VII; one quarter of VIII, IX and B.	23,543
TOTAL ..	.....	2,32,817	.....	90,873

The Deputy Conservator should be directed in future reports to give a brief analysis of the receipts and charges in the manner here indicated.

9. With reference to paragraph 34 of the report, in which an opinion is expressed as to its not being any longer necessary to make a special survey of the boundary lines of the reserves, I am directed to point out that the orders contained in paragraph 13 of the review on the Forest Report for 1873-74 still hold good, and that the Deputy Conservator should remain in communication with the Superintendent of Forest Surveys, and should, under the instructions of that officer, take the needful steps regarding the preparation of useful forest maps of the different reserves.

10. In conclusion, I am directed to convey the thanks of the Hon'ble the President in Council for the care you have bestowed on this important branch of the administration

I have the honour to be,

SIR,

Your most obedient Servant,

T. C. HOPE,

Offg. Secretary to the Government of India.

No.

COPY, with a copy of the Report, forwarded to the Meteorological Reporter to the Government of India for information.

No.

COPY of the same forwarded to the Superintendent of Forest Surveys for information and guidance, with reference to paragraph 8 of the above letter.

Under Secretary to the Government of India.

1876

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

FORESTS.

To

THE RESIDENT AT HYDERABAD.

No.

Dated Simla, the *November* 1876.

SUBJECT.

REVIEW of the forest report of Hyderabad for 1875-76.

G. C. B. P.—Simla.—10-11-76—450.

REPORT OF THE SUPERINTENDENT OF FOREST SURVEYS FOR 1875-76.

No. 80-971, dated Mussoorie, 20th October 1876.

From—The Officiating Superintendent, Great Trigonometrical Survey of India,
To—The Secretary to the Government of India.

AT the request of Captain Bailey, R. E., Superintendent of Forest Surveys, I have the honour to forward herewith the Annual Report of his operations for the year 1875-76.

2. Colonel Walker, in his letters as per margin, having entered fully into the subject of the scope of the operations as regards the requirements of forestry, it is only necessary for me, in reviewing the present report, to allude to the amount and style of the work executed, and I have much pleasure in stating that I consider the work of all kinds to have been very satisfactory, both as regards quality and quantity.

No 8-161, dated 5th February 1875.
No. 2-11, dated 7th January 1876.

3. The operations were carried on in three detachments, working in Dehra Dun, Jaunsar and Garhwal, the portions of country surveyed presenting very intricate and difficult features throughout, the hills being mostly covered with forest and jungle, which renders a faithful survey more tedious and difficult.

4. A large amount of triangulation and traversing has been executed in a satisfactory manner, and the plan adopted by Captain Bailey for fixing obligatory points on boundaries, in positions difficult of access, has proved very successful.

5. The topography is good, and, considering the intricate and rugged nature of the ground operated on, the outturn is satisfactory. The amount exceeds the area surveyed during 1874-75 by about 26 square miles. In this stage of the operations, native labour, under careful superintendence, was largely employed in surveying the main features of the hills, as well as the stream-beds and ravines, by which plan the work devolving on the European assistants was considerably relieved. The system adopted was ably carried out by Mr. Reynolds, and Captain Bailey is sanguine that by this method, when a little more experience has been gained by the native surveyors, he will be able to turn out hill-work at a really cheap rate, which I have every confidence in his doing.

6. Captain Bailey reports very favourably of the progress made by his native surveyors, and this is proved by the average monthly outturn of topographical area, by a party consisting of one European and six natives, having increased from 7¾ square miles during field season of 1874-75 to 12¾ square miles during the season under review.

7. The accompanying index charts show the extent of the work completed and that remaining for execution. The forest tracts in Jaunsar have been entirely completed; and, with the exception of a small portion of about 20 square miles, those in the Dehra Dun also.

8. Having been working conjointly with Captain Bailey in the general surveys of the Dehra Dun and Jaunsar during the past three years, I am glad to have this opportunity of testifying to the able and zealous manner in which he conducts the operations under his charge.

Annual Progress Report of the Forest Survey Department for the year 1875-76.

Field season.

THE principal work of the field season consisted of the following surveys, *viz.* :—

1st.—The continuation of the Dehra Dun and Siwaliks.
2nd.—The Deoban working circle and adjacent second-class forests in Jaunsar.
3rd.—Portions of the Kumaun and Garhwal Forests.

The areas plane-tabled, the distances traversed, and the number of points trigonometrically fixed are given in a table marked A.

Dehra Dun.

The nature of the work in Dehra Dun has been previously described.

Jaunsar.

The country surveyed in Jaunsar is mountainous, the highest peak (Deoban) being 9,347 feet, while the lowest point is about 4,000 feet above sea-level. Here it was impossible to traverse the boundaries, and the fixing of the 729 pillars by triangulation would have proved a very tedious and expensive process; 270 of them were, however, so fixed, and the remainder were put in by plane-table. Forty-four miles of hill roads and paths were laid down by computed traverses. This survey, which consisted of about 45 square miles on the scale of 4 in.=1 mile, and about 39½ square miles on the scale of 2 in.=1 mile, was entirely completed, and the maps are now being drawn.

Kumaun and Garhwal.

The Kumaun and Garhwal forest survey will probably be extended so as to include the whole of the blocks between the Sarda and the Ganges. It was commenced last season on the banks of the Kosi, and was continued in a westerly direction to the eastern end of the Patli Dun. The hills are

not so high as those among which our work in Jaunsar lay, but the altitudes ranged from about 1,300 to 4,900 feet above sea-level, and the ground is very rugged and precipitous. The hills generally are covered with trees, and surveying is rendered very difficult by them. One hundred and eighty-four miles of roads, paths, and stream-beds were laid down by computed traverses. The triangulation previously executed by the Great Trigonometrical Survey was extended and carefully superintended; native labour was largely employed in surveying the ridges and the spurs as well as the stream-beds and ravines. The system adopted, which was admirably carried out by Mr. Reynolds, has been found very successful, and I hope that after another season's experience of it I may succeed in turning out hill-work at a really cheap rate.

Barometrical observations.

Both in Jaunsar and Garhwal I attempted to obtain a number of heights by readings of the aneroid barometer. Native plane-tablers were instructed in the use of the instrument; but I regret to say that most of the results obtained are unsatisfactory, and I propose to adopt a different system next season.

Captain F. Bailey.

I returned from the Forest Conference at Simla on the 19th October, and relieved Mr. Reynolds in Jaunsar, where I remained until the end of December. I then proceeded to Garhwal, whence I returned to Jaunsar in the middle of April, and remained there until the beginning of June.

Mr. W. H. Reynolds, Assistant Conservator of Forests.

Mr. W. H. Reynolds has done excellent work. He started work in Jaunsar at the end of September, and returned to the Dun on being relieved by me about the 20th October. He there surveyed 11½ square miles in and below the Siwaliks, and left for Garhwal about 10th December. In Garhwal his outturn was 102 square miles of plane-tabling, and he remained there until the end of the season.

Mr. H. C. Hill, Assistant Conservator of Forests.

Mr. H. C. Hill rejoined from Simla on the 5th November, and on the 12th of that month he left for Garhwal to undertake some triangulation in the tract which we were about to survey. He received some assistance from Messrs. O. Greig and James Marten (both beginners), and triangulated about 224 square miles of country. In addition to this he superintended the road and stream traversing for about one month. He left Garhwal on the 18th April to undertake a working plan of the Simla Municipal Forests, and did not return until the 8th August. I regret to say that he has now been transferred to British Burma, and the Survey has lost a very good officer.

Mr. O. Greig, Assistant Conservator of Forests.

Mr. O. Greig was employed until the end of December in plane-tabling in Jaunsar. He then proceeded to Garhwal, where he was chiefly employed in triangulating and in office-work, and where he remained until the end of the season. He has made satisfactory progress, and will shortly return to his work under the Conservator, North-Western Provinces.

Mr. J. T. Jellicoe, Assistant Conservator of Forests.

Mr. J. T. Jellicoe, Assistant Conservator of Forests, arrived from Mysore on the 12th June for a course of instruction in surveying. He has done some traversing and office-work, and is about to commence plane-tabling. He has applied himself to his work in a satisfactory manner.

Mr. A. Stewart, Officiating Assistant Conservator of Forests.

Mr. A. Stewart, Officiating Assistant Conservator of Forests, joined from the Punjab on the 22nd July for a course of instruction. He is also about to commence plane-tabling, and has worked satisfactorily.

Mr. G. P. Chill, Forest Surveyor.

Mr. Chill resumed his work in the Eastern Dun and Siwaliks on the 25th October, and remained there during the whole season. His outturn of plane-tabling amounted to 74 square miles.

Mr. T. S. Marten, Forest Surveyor.

Mr. T. S. Marten was employed in Jaunsar from the 25th September to the 25th December, and from 16th March to 15th June. Here he plane-tabled 29½ square miles on the scale of 4 in.=1 mile, and 39½ square miles on half that scale. He was employed in the Siwaliks from the end of December to the middle of March, and turned out 41 square miles on the scale of 4 in.=1 mile.

Messrs. E. De V. Fitzgerald and James Marten, Forest Surveyors.

Messrs. Fitzgerald and James Marten were not able to take any part in superintending work, but they received instruction in triangulating and plane-tabling, and I think they will both turn out well.

Native establishment.

The native establishment worked well, and the surveyors and computers have made considerable progress.

Office-work.

The following sheets of the Dehra Dun and Siwalik survey have been drawn during this recess, *viz.*, XVII, XVIII, XXV, XXVI, XXVII, XXXV, XXXVI, and XLI, and they will shortly be sent to the office of the Superintendent, Great Trigonometrical Survey, to be photozincographed. There will then remain only sheets XXVIII, XXIX, XXXVII, and XXXVIIA to be drawn by us, as the remainder of the sheets are being drawn by the Kumaun and Garhwal party of the Great Trigonometrical Survey.

Sheets 9, 11, 12 of the Kumaun and Garhwal Forest Survey have been drawn by Mr. Reynolds, and will also shortly be sent up to be photozincographed.

Eight hundred and twelve copies of the following sheets of the Dehra Dun and Siwalik Survey were coloured, *viz.*, I, III, IV, V, VI, VII, IX, X, XII, XIII, XIV, XV, XIX, XX, and XXI.

Three maps of the forests Ajmere and Mhairwarra, and of the Byraghar reserves in Berar, were drawn for publication in the report of the late Forest Conference, and 2,250 copies were coloured in my office.

A map of the Palamow Reserved State Forest in Bengal has been drawn for photozincography, and 500 copies of it are to be coloured for the Conservator of that Province.

Twenty-seven copies of Mr. Reynolds' map of Khánpur, Hazárá, have been coloured; and the forest boundaries have been drawn on 18 sheets of the Khágán and Siran maps.

Two copies of a map of Kulu, enlarged from the atlas sheets to the scale of ½ in. = 1 mile, have been prepared for the Inspector-General of Forests.

The map of the forests in the North-Western Provinces has been delayed pending the settlement of the limits of the blocks to be reserved, but it is now nearly completed.

Two large tracings from the field sheets of a portion of the Eastern Dun were supplied to the Conservator of Forests, North-Western Provinces.

Office accommodation.

The present office accommodation is inadequate to the increasing requirements of the Department, and I have made a representation on the subject to the Inspector-General of Forests.

F. BAILEY, *Captain, R. E.,*
Supdt. of Forest Surveys.

A.

Abstract of field-work and computations executed by the Forest Survey in 1875-76.

Details	Distance, number, or area.	Remarks.
Interior traversing in the field—		
Jaunsar	43·6 miles ...	Average correction on hypothenuse 7·26 per 1,000.
Garhwal	183·8 " ...	" " 6·04
Points fixed by triangulation—		
Jaunsar	137 " ..	26 visited; 30 not yet computed.
Garhwal	270 " ...	
Points fixed by interpolation—		
Jaunsar	287 " ...	115 not yet computed.
Garhwal	8 " ...	
Plane-tabling completed—		
Dehra Dun	126·55 square miles	313·43 square miles.
Jaunsar	84·68 "	
Garhwal	102·20 "	
Triangulated and partly traversed in advance—		
Garhwal	121·32 "	

DEHRA DUN,
The 1st October 1876.

F. BAILEY, *Captain, R. E.,*
Supdt., Forest Surveys.

No. 121, dated 30th January 1877.

From—The Officiating Secretary to the Government of India.
To—The Superintendent of the Great Trigonometrical Survey.

I AM directed to acknowledge the receipt of your letter No. 80-971, dated the 20th October last, submitting, with your remarks, the Annual Report of the Superintendent of Forest Surveys for the year 1875-76, and to convey the thanks of the Governor-General in Council for the assistance you have rendered to the Forest Survey Department during the period to which the report relates.

2. The year under report has been the first since the establishment of the Forest Survey Department in which separate parties were employed simultaneously in the survey of forest districts at a considerable distance from each other, and it is satisfactory that Captain Bailey was able to provide sufficient supervision for the work carried on in different localities. His Excellency in Council is glad to observe that Native labour was largely employed in surveying the main features of the hills, and that there is good prospect that the cost of these operations will, by this plan, be considerably reduced.

3. Effect has now been given to the intentions of the Government of India regarding the training of junior officers of the superior staff by attaching them for a time to the Forest Survey, and His Excellency in Council hopes that some at least of the officers who have received this training will, on return to their own provinces, be able to accomplish useful work in such topographical survey

of the forests as may from time to time become necessary. The next step will be to employ the Forest Survey for the professional education of subordinate Forest officers and of candidates for employment in the subordinate branch of the Forest service.

4. The Governor-General in Council feels assured that the usefulness of the Forest Survey Department will be steadily increased in the manner here indicated, and that it will prove to be an important and most useful institution in connection with Forest administration in India.

Nos. 122 to 124.

COPY forwarded to the Government of the North-Western Provinces, the Surveyor-General of India, and to the Superintendent of Forest Surveys.